TREADMILL
SERVICE MANUAL

ClubTrack®
ClubTrack Plus®

HR ClubTrack™
HR ClubTrack Plus™

MedTrack® CR60
MedTrack® SR60

000377-833
033387-005 Rev New

Quinton®
instrument co.

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Preface

This manual contains information for servicing and repairing the following Quinton® Hyperdive™ treadmills to the module level:

ClubTrack®	P/N 00377
ClubTrack Plus®	P/N 00382
HR ClubTrack™	P/N 00402
HR ClubTrack Plus™	P/N 00425
MedTrack® CR60	P/N 00380
MedTrack® SR60	P/N 00390

The manual covers domestic and international versions of the treadmills, which are differentiated by dash number—see Appendix C, *Part Numbers*.

The manual is designed for Quinton-authorized service personnel with proper training. There are no user-serviceable parts in the treadmills. Any attempt by non-Quinton-trained personnel to service the treadmill may void the warranty. For service information, call Quinton Technical Service: 1-800-426-0538.

Before servicing the treadmill, read the safety requirements listed in Appendix A.

➤ Do not use this manual when servicing Series 90™, Q-Series™, or ClubTrack 3.0™ series treadmills.

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Overview

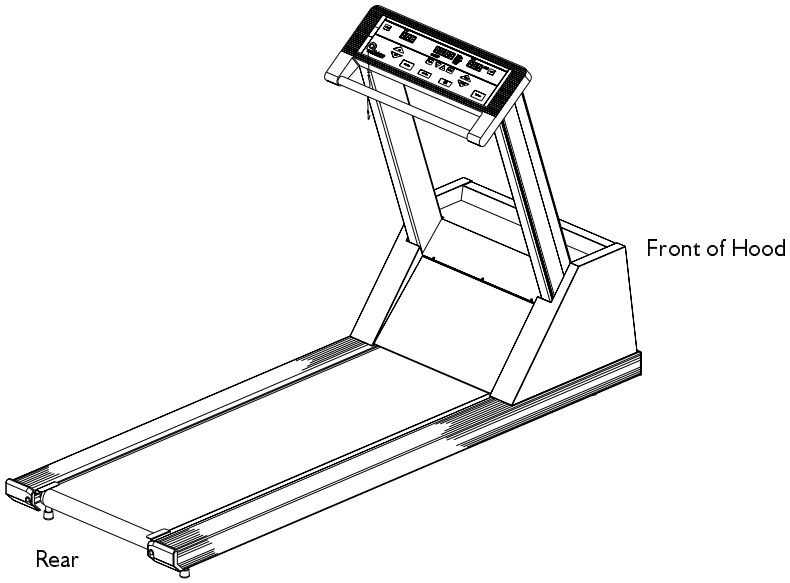
ClubTrack®

Quinton's ClubTrack series of treadmills are motorized treadmills with built-in controllers and are designed for fitness exercise. The series includes the ClubTrack, P/N 00377; HR ClubTrack with Heart Rate Monitoring, P/N 00402; ClubTrack Plus, P/N 00382; and the HR ClubTrack Plus, P/N 00425. The ClubTrack Plus provides manual and programmed operation. The HR ClubTrack Plus adds Heart rate control, interval programming, and a computer interface.

MedTrack®

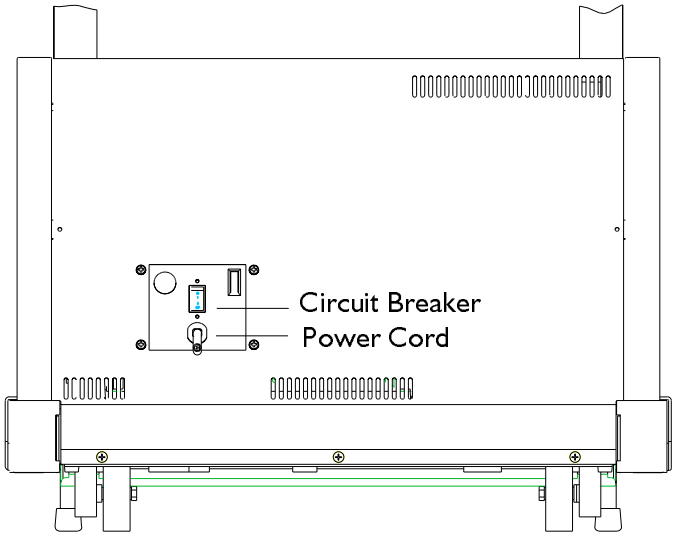
The MedTrack rehabilitation treadmills are designed for rehabilitation exercise. Two models are available: the CR60 for cardio-pulmonary rehabilitation (P/N 00380) and the SR60 for sports rehabilitation (P/N 00390). Both feature a built-in controller.

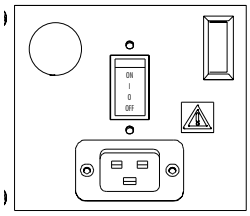
See the Appendix of the applicable operator manual for installation requirements.



Sample Treadmill

Configuration Plate





Treadmills distributed for use outside the USA and Canada have detachable power cords.

Power

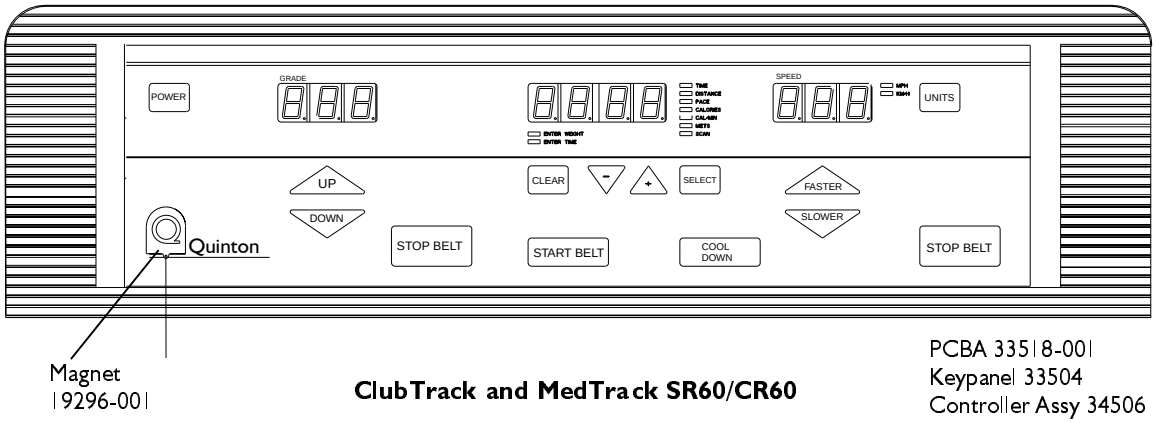
The circuit breaker on the front of the treadmill hood controls the power to the treadmill. The circuit breaker must be set to *ON* for the treadmill to run.

➤ Turn off the circuit breaker before connecting or disconnecting the treadmill from the wall outlet.

Operation

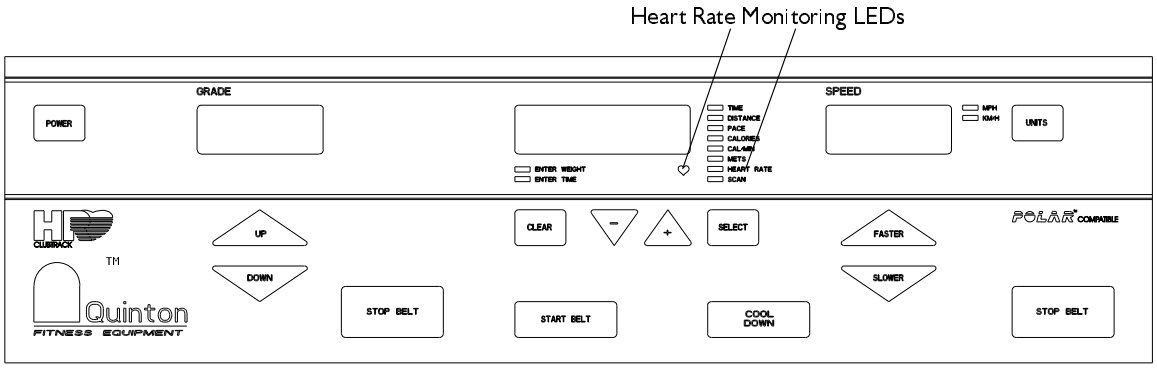
The controller, which is mounted above the front handrail, is a computerized panel used to operate the treadmill. All commands, including power, are entered by pressing a soft-touch key on the panel. Visual indicators and displays show the operational status and exercise results.

Controllers



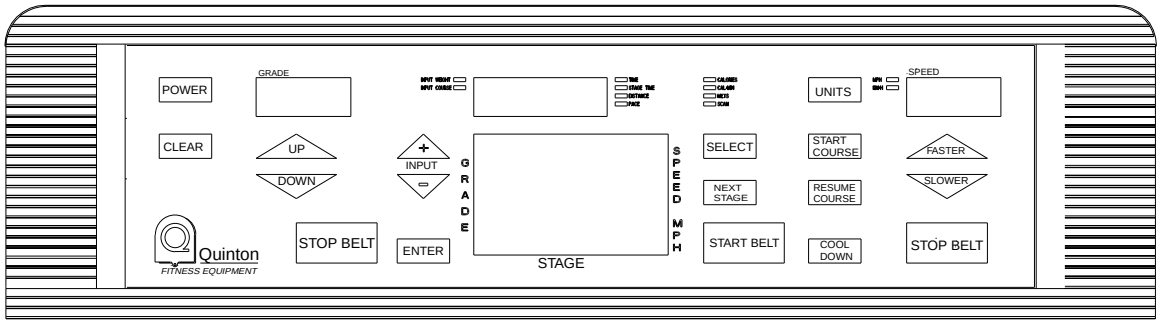
ClubTrack and MedTrack SR60/CR60

PCBA 33518-001
Keypanel 33504
Controller Assy 34506



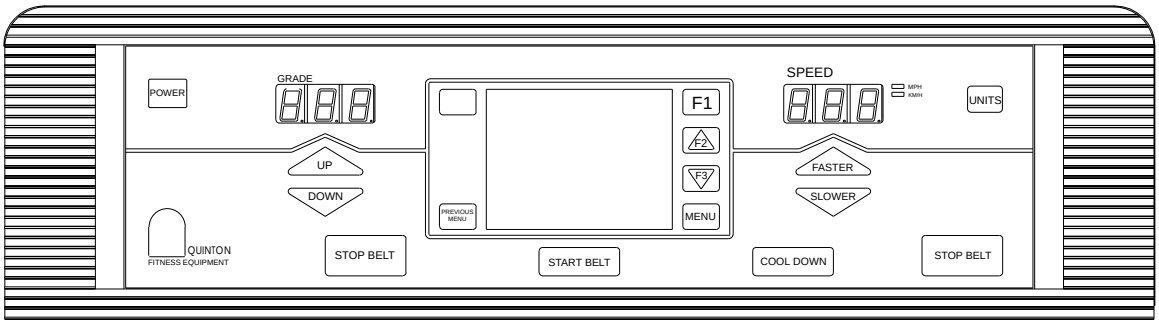
HR ClubTrack Controller with Heart Rate Monitoring

PCBA 34296-001
Keypanel 34298
Controller Assy 34297



ClubTrack Plus

PCBA 33519-002
Keypanel 33505
Controller Assy 34505



HR ClubTrack Plus Controller with Heart Rate Control

PCBA 35452
Keypanel 35260
Controller Assy 35258

2

Theory of Operation

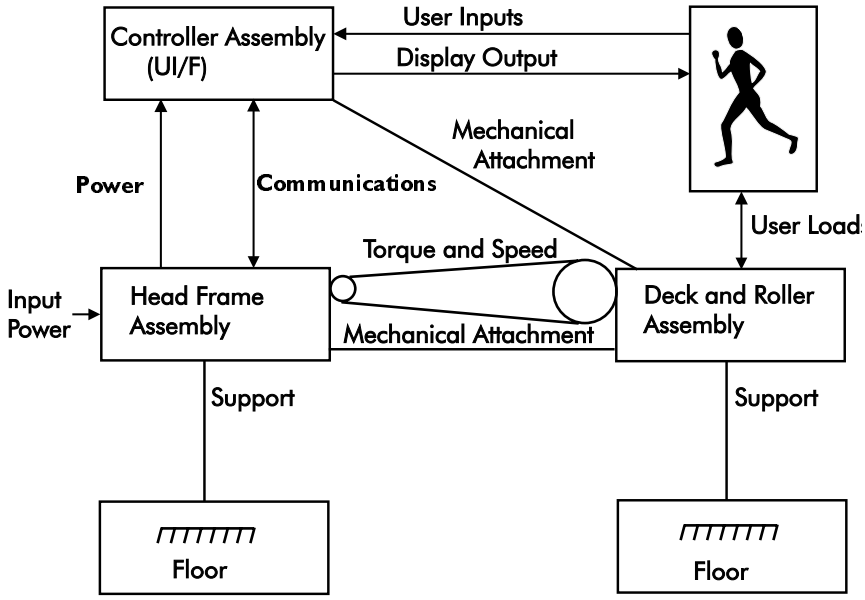
Overview

The treadmill consists of three major assemblies: controller, headframe, and deck and roller.

Controller Assembly

The controller assembly, which is mechanically attached to the deck, is the user interface. The user presses a key on the controller to enter a command. The controller

- processes the user-entered information
- displays all exercise data
- sends commands to the head frame assembly.



Treadmill Subassemblies

Headframe Assembly

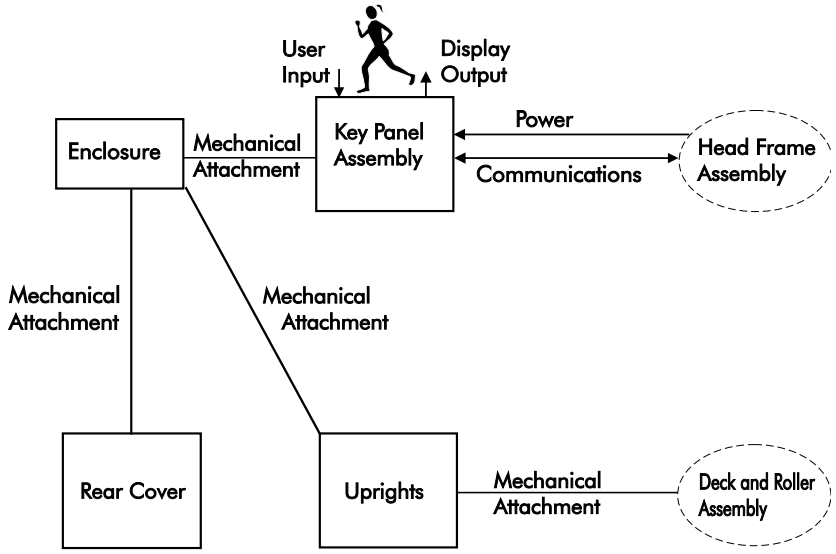
The headframe assembly includes the drive and grade systems and the electronics that drive these systems. A three-phase AC motor drives the walk belt by supplying torque and speed to the drive pulley through a drive belt. A DC motor drives the front of the treadmill up and down to simulate hills. The headframe assembly receives speed and grade commands from the controller.

Deck and Roller Assembly

The deck and roller assembly is attached to the headframe and supports the rear of the treadmill. It provides the platform for the walk belt. The drive belt supplies torque to the walk belt through the drive roller pulley.

Controller Assembly

The controller assembly consists of a keypanel and PCBA mounted in an enclosure. The enclosure, which has a removable rear panel, mounts to the uprights.



Controller Subassemblies

Keypanel

The keypanel assembly consists of a membrane key or switch panel and a PCBA. The keypanel and PCBA are connected through a flexible cable that is part of the keypanel. A keypanel connector mates to a PCBA connector.

User Inputs

The user enters all control commands through the keypanel. The controller scans the membrane switches on the keypanel. The controller PCBA interprets switch closure, updates the displayed values, and sends control commands to the drive board.

Output Displays

The controller assembly uses LED displays mounted on the controller PCBA. These displays show pertinent treadmill information including target speed and grade and accumulated exercise information. The HR CLubTrack Plus also displays data on an LCD screen.

Additional Functions

The controller assembly also:

- performs an electronic self-test when the treadmill is turned on
- provides a special mode for manufacturing and service testing
- includes circuitry for the magnetic access switch.

Controller to Treadmill Interface

The controller communicates with the treadmill drive board through a standard RS422 interface. The controller sends commands to the treadmill drive board and receives acknowledge and status statements from the treadmill drive board. The controller uses 12 VDC power from the treadmill drive board as the power source for all circuitry and for the LED displays.

HR ClubTrack Plus Interface

An RJ-45 interface connector on the rear of the HR ClubTrack Plus treadmill permits connecting the treadmill to a computer for exercise monitoring. The interface complies with the industry standard CSAFE communications protocol. Consult Quinton's web site *www.quinton.com,* Fitness Products, for an internet link to the CSAFE specifications.

Headframe Assembly

The headframe assembly consists of the following components:

- Input power module
- Drive board assembly
- Transformer assembly
- Drive motor assembly
- Grade motor assembly
- Grade system consisting of a pinion shaft, rack gears, feedback potentiometer, and limit switches.

Input Power Module

The input power module receives line power from the power outlet. When sold for use in the United States and Canada, these treadmills use 115 VAC power. When sold for use in Europe and the United Kingdom, the treadmills use 230 VAC power.

Drive Board

The treadmill drive board uses line power to develop 300 VDC which is then used to create three-phase power for the drive motor assembly. The frequency of the three-phase signal sent to the drive motor determines the drive motor rotational speed. The motor current draw is a function of the torque load placed on the motor through the deck assembly by the user.

The drive board uses 110 VAC power to generate a half wave rectified signal used to drive the grade motor. Two solid state relays drive the grade motor: one in the direction of increasing grade, the other in the direction of decreasing grade.

Drive Motor Assembly

The drive motor, which is driven by the drive board, delivers torque and speed to the front roller of the treadmill through a poly-V belt and a set of speed reduction pulleys. A flywheel, integral to the motor poly-V pulley, is used to average the pulsing runner loads.

Grade Motor Assembly and System

The grade motor drives the grade pinion shaft, using a chain and a set of speed reduction sprockets. The grade pinion shaft in turn drives a set of rack gears, which raise and lower the front of the treadmill.

A grade potentiometer is used to sense the actual treadmill grade for the grade system feedback. Limit switches limit the travel of the rack gears in the event of potentiometer failure or incorrect calibration.

Deck and Roller Assembly

The deck and roller assembly provides the running surface for the user. This surface consists of a movable, flexible walk belt supported by a semi-rigid platform. The platform is supported by a steel-welded frame.

A poly-V-belt, coupled through a pulley to the drive motor, drives the front roller. The front roller uses friction to drive the walk belt. A rear roller, acting as an idler pulley, tensions the walk belt. Both rollers are mounted to the steel support structure.

Heart Rate Monitoring Option

The heart rate monitoring function is a wireless system based on existing hardware purchased from POLAR Electro, Inc. The system consists of a transmitter worn on the chest of the user and a receiver mounted inside the controller enclosure. Electronics inside the belt sense electrical energy on the skin during a heart contraction. The transmitter emits a short electrical field burst. At the receiver, the burst is transformed into a digital signal that is monitored by the controller microprocessor. The microprocessor measures the time between digital pulses, then calculates and displays beats per minute.

Transmitter

The transmitter is imbedded inside the chest belt and begins transmitting as soon as it detects the user's heart beat. Transmission frequency is approximately 5kHz.

Receiver

The receiver PCBA is encased in a shock-absorbing module. Electrical connections to the controller PCBA comprise three wires and a removable connector.

- Reception range is approximately 3 ft (1m).
- Proximity to electric motors, monitors, power supplies, T.V., etc. can cause directional and attenuating interference.

Microprocessor

The microprocessor calculates the heart rate and displays it in the multifunction display.

3

Troubleshooting

The tables and flow charts in this chapter cover the following potential problems:

- electrical problems: power, cable connections
- electronic problems: PCB, test points, signals
- mechanical problems: noise, vibration, grade, speed, belts

See Chapter 4 for repair and replacement procedures.

Tools

These tools may be needed:

- Phillips screwdrivers
- ½-inch hex socket wrench
- stethoscope
- Ohm meter

WARNING

- **High voltage is present under the hood when the treadmill is plugged into a power source; residual high voltage remains for a few minutes after the power is removed. Turn off the treadmill circuit breaker, then unplug the treadmill from the power source before removing the hood. Use extreme caution at all times when the hood is removed.**
- **Secure loose clothing, jewelry, and long hair before working near treadmill parts.**
- **Never place your fingers near rotating parts.**
- **Do not start the walking belt when someone is on the treadmill.**

Electrical Problems

Use this table when:

- The treadmill will not start.
- There is no display on the controller.
- The treadmill stops unexpectedly.

Possible Cause	**Action**
Treadmill not plugged in	Plug power cord into appropriate outlet.
Power not on	Press the **Power** key on controller.
Limited access control activated, but magnet not in place	Place magnet on Quinton logo, then press **Power** twice (off/on). To disable the control, remove magnet, then press **+**, **-**, and **Power** simultaneously.
Circuit breaker on treadmill set to OFF	Set treadmill circuit breaker to ON.
Building circuit breaker tripped	Contact building maintenance to reset circuit breaker. If circuit breaker trips again, 1. Check outlet voltage. If necessary, verify that the power at the outlet and at the breaker is the correct rating for the treadmill. 2. Verify that the power cord is not caught in the rack gear. 3. Replace the configuration plate (faulty in-rush limiter).
Power cord damaged	Remove cord from outlet and replace
Blown fuse in treadmill	If any of the transformer primary fuses, F3 through F6, are blown: 1. Check the primary transformer windings for continuity (P/N 327065-001). Should be 2 ohms or less. 2. Replace fuses and if the fuses blow again, isolate mechanical assembly and ensure that no parts are jammed (e.g. rack gear in grade change assembly). If F1 or F2 are blown, check the 21 Volt power supply.
Control cable between VSD* and controller faulty	Check for bent or broken pins. Replace control cable.
VSD failure	Replace VSD if necessary.
Controller failure	Replace controller circuit board.
Configuration plate connection faulty	Check configuration plate connections; reattach or crimp as required. If problem persists, replace configuration plate.
Treadmill stops during run; **Stop Belt** has not been pressed. No error message appears	Look for loose ground wires. Reconnect and secure if loose.
LCD screen test failure	Replace LCD, repeat test. If test fails again, replace PCBA.
HR ClubTrack Plus LCD does not come on	If the LEDs are on and the treadmill is functioning normally, check the LCD connector. If problem persists, replace the controller PCBA.
External RS232 port failure	Perform loop-back test. If test fails, replace PCBA.
* VSD (variable speed drive): circuit board assembly that controls the motor	

Electronic Problems

Error Codes

The treadmill performs an electronic self-test each time that it is powered up. If a problem is detected during either power-up or operation, an error code appears on the display. Note the code recorded by the owner, then reference the table of error codes.

If you replace a faulty PCB Assembly, return it to the factory and note the error code.

Code	Indication	Recommended Action
E001	Variable speed drive (VSD) microprocessor chip failure	Replace VSD.
E002	VSD microprocessor EPROM/SRAM failure	Replace VSD.
E004	VSD A/D failure	Replace VSD.
E101	Controller PCBA microprocessor failure	Replace controller.
E102	Controller PCBA EPROM failure	Replace controller.
E103	Controller PCBA interrupt failure	Replace controller.
E105	Controller PCBA NVRAM failure	Re-initialize NVRAM: 1. Press **Stop**, **Faster,** and **Slower** to enter Service Mode. 2. Press **Stop** and **Cool Down** to reinitialize. (For HR ClubTrack Plus, press the *NV PROGRAM LOAD TEST* key. Proceed to step 4.) 3. Press **Clear**. 4. Reconfigure controller, pg 4-30 (HR Plus, adjust the contrast after reconfiguring.) If error E105 persists, replace controller.
E106	ClubTrack Plus Controller display RAM failure	Replace controller.
E201	Grade error	1. Enter service mode. 2. Calibrate POT. 3. If error persists, replace POT. 4. If error persists, replace VSD.
E202	Speed error. A software check of redundant speed variables has indicated a disagreement and the microprocessor will shut down the treadmill.	Clear the error by pressing **Clear** or **Power**. Attempt to operate the treadmill again. If error persists, replace the VSD board.

continued

Error Codes (continued)

Code	Indication	Recommended Action
E203	Motor overload caused by one of the following:	
	1. Runner heavier than weight/speed envelope.	1. Restrict use to people within the weight/ speed specifications.
	2. Deck wear	2. Check deck wear; replace if necessary.
	3. Motor lead disconnected or loose	3. If the motor does not turn, check the motor leads to ensure all leads are connected. One loose or disconnected lead will cause overload.
	4. Electrical short on the board near the power electronics	4. Examine board for shorts. Examine board for blackened components or discoloration.
	5. Power electronic component failure	5. Replace board if damaged.
	6. Motor blocked by obstruction	6. Remove obstruction.
E204	VSD and controller not communicating	Verify cable connections at both ends. Check for bent or broken pins; replace if required. If error persists, replace VSD or controller as necessary.
E205	Software tachometer fault	Clear the error by pressing **Clear** or **Power**. Attempt to operate the treadmill again. If error persists, replace VSD board.
E206	Controller or VSD performs inadvertent reset	Verify wire grounding system is intact.
EPHI	VSD ABS voltage is too high. Line voltage is too high. VSD board failure	Refer to EPHI error code flow chart elsewhere in this chapter.
EPLO	VSD ABS voltage is too low. Line voltage is too low. Transformer connection is bad. Transformer failure. VSD board failure.	Refer to EPLO error code flow chart elsewhere in this chapter.

Service Mode

The treadmill provides a service mode for troubleshooting the electronics. To enter the service mode, press **Stop Belt**, **Faster**, and **Slower** simultaneously. P000 appears in the *Select* display, indicating that no key is pressed. In the ClubTrack Plus, the word *Service* scrolls across the tri-color display.

To exit the service mode, press and release the same three keys simultaneously or press **Power** twice to power up into normal mode.

➤ In service mode, the HR ClubTrack Plus screen lists the tests described below. To perform a test, press the softkey next to the test name, rather than pressing the indicated key combinations.

Firmware Revision

To display the firmware revision level of the PCB assemblies:

1. Enter the service mode.
2. Simultaneously press **Stop Belt** and **Grade Up**. The controller firmware revision level appears in the *Select* display.
3. Simultaneously press **Stop Belt** and **Grade Down**. The VSD revision level appears in the Select display.

Controller Keys

To test the keys on the key panel:

1. Enter the service mode. If a key has shorted out, **P555** appears in the *Select* display.
2. Using the table below, press each key in succession to display the appropriate code in the *Select* display (the HR ClubTrack Plus displays text instead of code). **P000** should reappear when you release each key.

Key	Code
No key pressed	P000
Shorted Key(s)	P555
Clear	P001
Up	P002
Down	P003
Stop Belt	P004
Input +	P005
Input -	P006
Enter	P007
Select	P007
Next Stage*	P008
Start Belt	P009

(continued)

Units	P010
Start Course*	P011
Resume Course*	P012
Cool Down	P013
Faster	P014
Slower	P015

*ClubTrack Plus only

Displays

To test the displays on the key panel:

1. Enter the service mode.
2. Simultaneously press **Stop Belt**, **Grade Up**, and **Grade Down**.
3. The display cycles through one digit at a time in each display, starting from left to right across the panel. Each digit displays the number **8** and the associated decimal point for one second, then turns off as the next one lights up.
4. When this is completed, the LEDs light up individually, starting from the top. The *Select* LEDs illuminate first, followed by the *Units* LEDs.
5. After the LEDs are tested, all the digits in all three displays simultaneously count up from 0 through 9. (No decimal points light during this count.)

Tri-color Display

(ClubTrack Plus P/N 000382 only) To test the color display on the ClubTrack Plus:

1. Enter the service mode.
2. Simultaneously press **Next Stage**, **Up**, and **Down** until the test begins.

Vertical columns on the tri-color display light red, green, then yellow for one second each. The columns move from left to right until all display LEDs have been tested.

Horizontal columns light red, green, then yellow for one second each. The columns move from top to bottom until all LEDs have been tested.

All LEDs go dark when the test is finished.

Speed/Grade (Open-Loop Mode)

In Service mode, the treadmill operates as in open-loop mode, which is used to verify treadmill speed or grade. In this mode, the treadmill displays the actual speed or grade, rather than the target speed or grade.

➤ The ClubTrack Plus is in both open-loop speed and open-loop grade modes simultaneously.

Approximate speed and grade range:
1.0 to 12.0 mph (1.6 to 19.3 km/h)
0 to 15 %, 0 to 8.53°.

Speed

1. Enter the service mode.
2. Press **Up**, **Faster**, and **Slower** simultaneously to enter open-loop speed mode.
3. Press **Stop Belt**, **Faster**, and **Slower** simultaneously to exit the service mode; do not press the Power key.
4. Ensure that no one is standing on the walking belt, then press **Start Belt**.
5. Press and hold **Faster** or **Slower** to change the speed.
6. When testing is finished, press **Clear**, or press **Power** twice to exit open-loop mode.

Grade

1. Enter the service mode.
2. Press **Faster**, **Up**, and **Down** simultaneously to enter open-loop grade mode.
3. Press **Stop Belt**, **Faster**, and **Slower** simultaneously to exit the service mode; do not press the Power key.
4. Press and hold **Up** or **Down** to change grade.
5. When testing is finished, press **Clear**, or press **Power** twice to exit open-loop mode.

HR ClubTrack Plus™ LCD Display Test

The LCD display test verifies that the display and its electronics are functioning correctly. If any of the six tests fails, see *Electrical Problems* troubleshooting table, page 3-2.

Select the *LCD Display Test* to begin the series of six tests. To progress from one test to the next, select *MENU*.

1. Display Limits Test

A box appears with a one-pixel border between the outer edge of the box and the edge of the display. A single horizontal and vertical line intersects the box. If the box does not appear as described, the test has failed.

2. All pixels ON

The entire display should appear white. A corrupted pixel would be black.

3. All pixels OFF

The entire display should be off or dark. A corrupted pixel would be white.

4. Contrast

The contrast changes smoothly from maximum contrast to minimum. Large jumps in contrast could indicate a failure in the contrast circuit or LCD.

5. Fluorescent tube brightness test

The tube adjusts to its three possible states, going from bright to dim to off, then back to bright. The sequence continues until you press the *MENU* key.

6. Fonts

The screen displays the alphabet. Garbled characters indicate an electronics or LCD problem.

HR ClubTrack Plus™ LCD Contrast

Select the *Set Screen Contrast* key. After adjusting, press **MENU** to store the selected value. The setting remains when the treadmill is turned off. Always adjust the screen contrast after performing the NV PROGRAM LOAD test—the load test resets the contrast to the default value.

HR ClubTrack Plus™ LCD External RS232 Port Test

The controller automatically tests the RS232 chip during power up using an internal loop-back test. To test further, connect an external loop-back connector, then select the *RS232 Port Test* key. The loop back connects the *transmit out* to the *receive in,* allowing the controller to verify proper operation through the external connector. As the test progresses, the LCD displays a series of messages: **C—1, C—2, C—3, C—P. CEEE** appears if an error occurs. Remove the loop-back connector after the test is finished.

Testing Pin Signals on the Communications Cable

Communication cable problems can cause an E204 error message. Use an ohmmeter to test for the following conditions:

1. Check each wire for continuity from one end of the cable to the other.
2. Check each wire for a short to another wire.
3. Check each wire for a short to the metal connector housing at the drive end.

Signals on Control Cable Pins

Pin No. VSD (J12)	Pin No. DPU (J1)	Signal
1	1	T+ (Transmit+)
2	2	T - (Transmit -)
3	3	R+ (Receive+)
4	4	R - (Receive -)
5	5	GND (Ground)
6	6	N/C
7	7	GND (Ground)
8	8	+12 VDC
9	9	+12 VDC

NOTE: J12 is a D-sub connector. J1 is a MASCON connector.

Heart Rate Monitoring Option

The Polar system for heart rate detection and transmission has been time-tested and shown to be accurate and reliable; however, there is a small percentage of people for whom the system will not work. If all the steps in the following table are performed and the belt and controller appear to be operating correctly, the user's heart rate may not be detectable by the system.

Problem	Possible Cause	Remedy
Heart rate reading is erratic or absent.	Poor electrode contact	1. Be sure that the logo on the belt is facing out, that the belt is tight enough, and that the electrodes are flat against the skin. 2. Moisten the electrodes again. 3. Be sure the receiver is within range—32 inch (81 cm). 4. Wash belt.
Heart rate is erratic or above 200.	1. HRM treadmills too close together. 2. Interference from electromagnetic signals (e.g., other belt transmitters, T.V., motors, computers, and such).	1. Move the treadmills at least 18 inch (46 cm) apart. 2. Move the treadmill away from the source of interference.

Problem	Possible Cause	Remedy
No signal on controller	1. No electrode contact	1. Reposition chest belt, re-wet electrodes.
	2. Faulty chest belt	2. Test signal using different belt transmitter or a pulse simulator; replace old belt if faulty.
	3. Faulty receiver	3. Test the belt transmitter using a different receiver. If transmitter is working correctly, replace receiver.

Testing Heart Rate Accuracy

Use a pulse simulator (P/N 34198-008) and a Polar watch receiver (P/N 34198-009) to test the accuracy of the controller's heart rate function.

1. Turn on the pulse simulator. The LED on the front of the simulator will blink in synch with the signal.
2. Place the Polar watch receiver next to the pulse simulator to begin receiving. The watch will display the digital heart rate.
3. Check the rate displayed on the watch against the rate displayed on the controller. If the controller differs by five beats, replace the receiver (P/N 34295) and retest. If the problem remains, replace the controller assembly (P/N 34297).

Mechanical Problems

Mechanical problems can include noise and vibration caused by loose or worn parts. Use the following tables to diagnose mechanical failures.

Walk Belt

Problem	Possible Cause	Action
Belt stops and an overcurrent error code appears.	1. Heavy runner increased the resistance on belt.	1. Do not exceed weight envelope (see *Specifications*).
	2. Runner holding handrail stopped belt movement for more than two seconds.	2. Do not resist belt for more than two seconds.
	3. Worn deck	3. Turn over or replace deck.

Problem	Possible Cause	Action
Walk belt slipping	1. Improper walk belt tension. 2. Incorrect drive belt tension or drive belt worn.	1. Adjust walk belt tension. 2. Check drive motor belt. Adjust tensioner or replace drive belt if necessary.
Walk belt not tracking	Belt misaligned or tracking adjustment bolt overtightened.	Adjust tracking.
Walk belt worn	Various	Replace belt and deck.
Walk deck worn	Various	Replace belt and deck.

Drive Belt

Problem	Possible Cause	Action
Squealing sound similar to an automobile fan belt — OR — Walk belt slows when user's foot strikes the deck	Drive motor belt (poly-V belt) slipping	Adjust drive belt tension. Replace drive belt if necessary.

Treadmill Noise

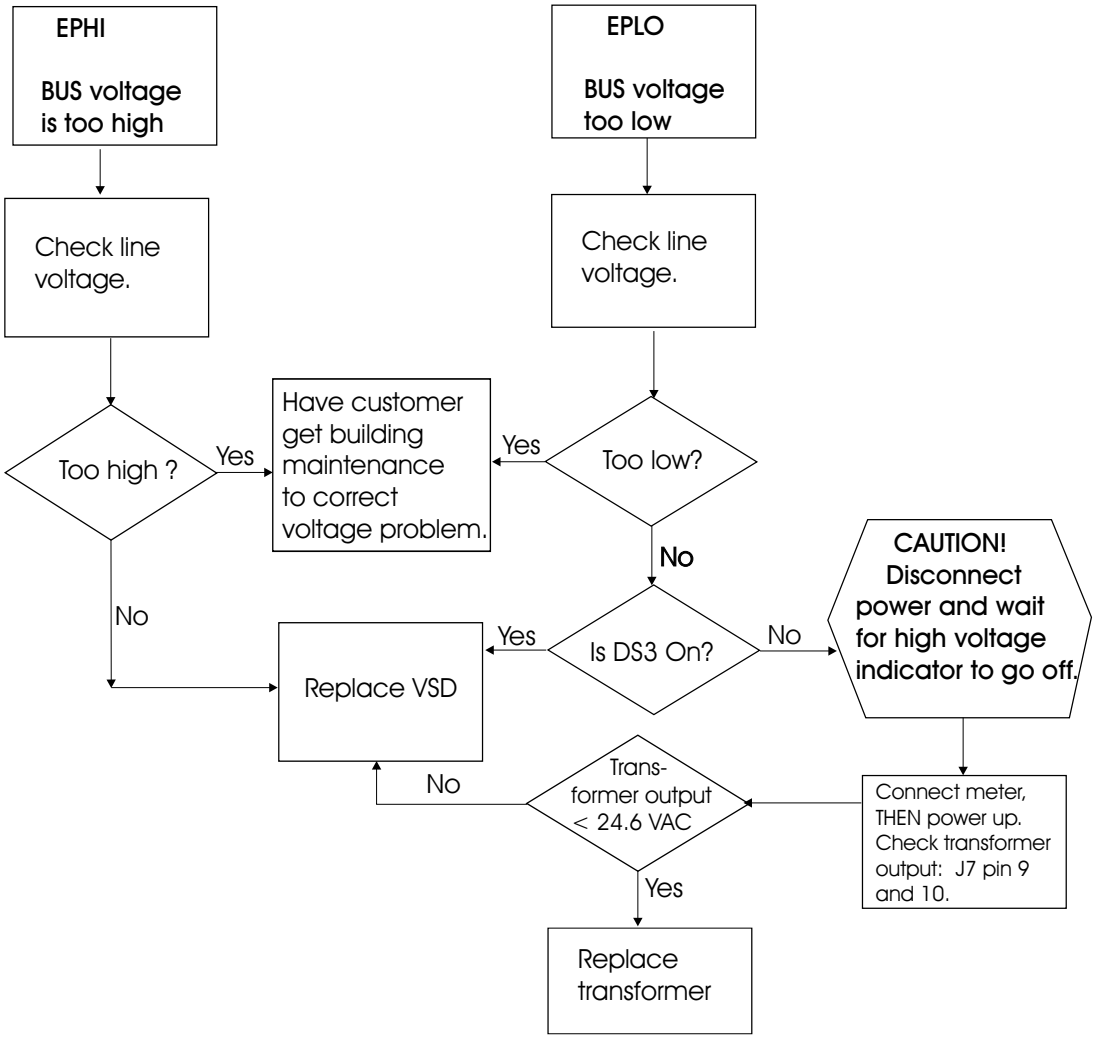
Noise	Possible Cause	Action
Knocking or thumping. Rate increases or decreases with walking belt speed.	Front or rear roller (pulley) assembly bearings	Isolate* and replace roller assembly
Squealing (similar to loose automobile fan belt)	Drive belt loose	Adjust belt tension. Replace belt if necessary.
Popping during grade change	Faulty elevation chain alignment	Adjust alignment of sprockets.

* The rate of bearing noise can help determine which bearing is at fault. The number of knocks per minute varies with treadmill speed because the roller speeds change as the belt speed changes. Use a stethoscope with a tube-like end, or a piece of hose about two feet long, to isolate bearing noise. Hold one end of the hose near the suspected bearing and the other end near your ear. Compare several bearings to determine which is the faulty one.

Flow Charts

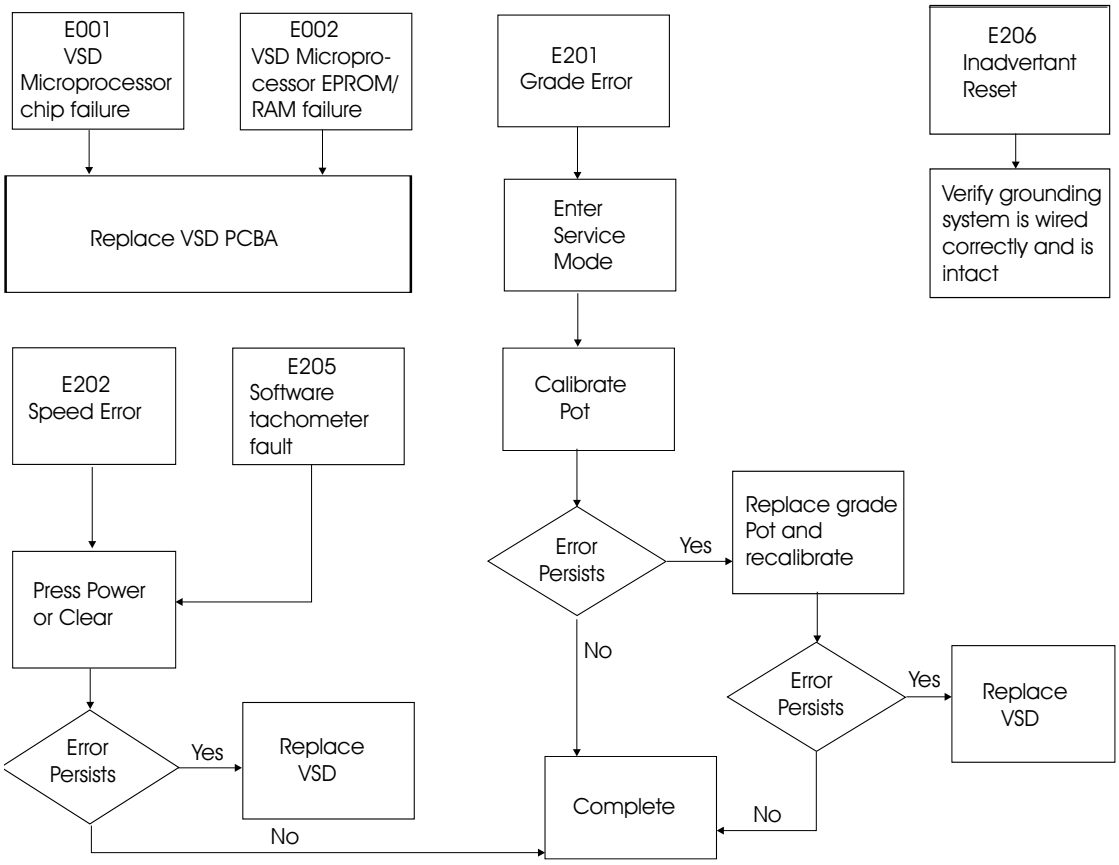
Use the following flow charts for step-by-step troubleshooting.

Error Code Flow Chart: EPHI and EPLO



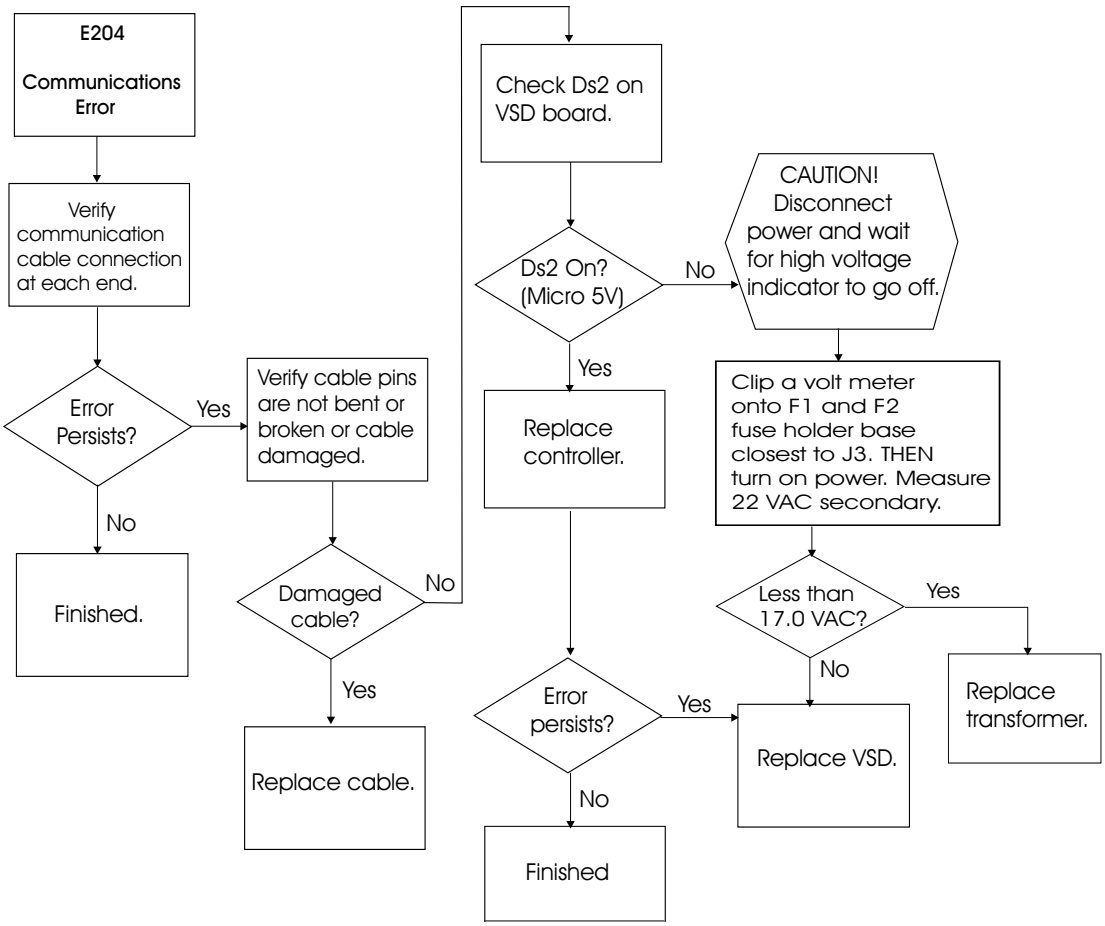
BUS Voltage

Error Code Flow Chart: E001



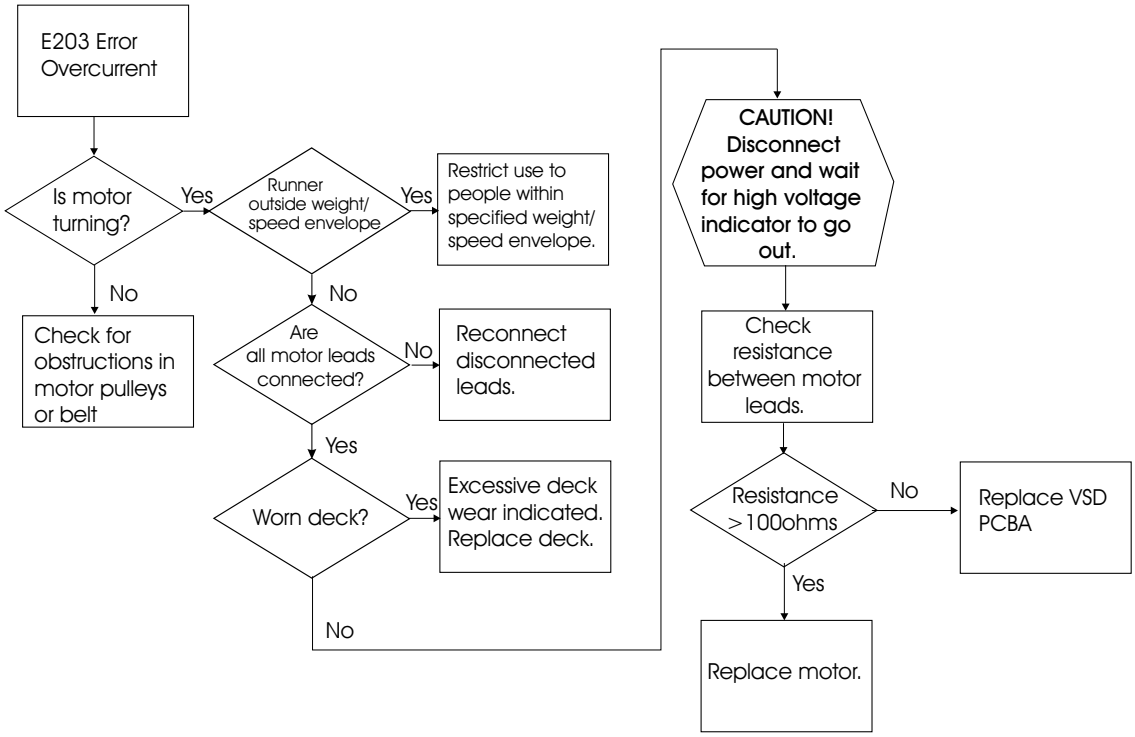
VSD Board

Error Code Flow Chart: E204

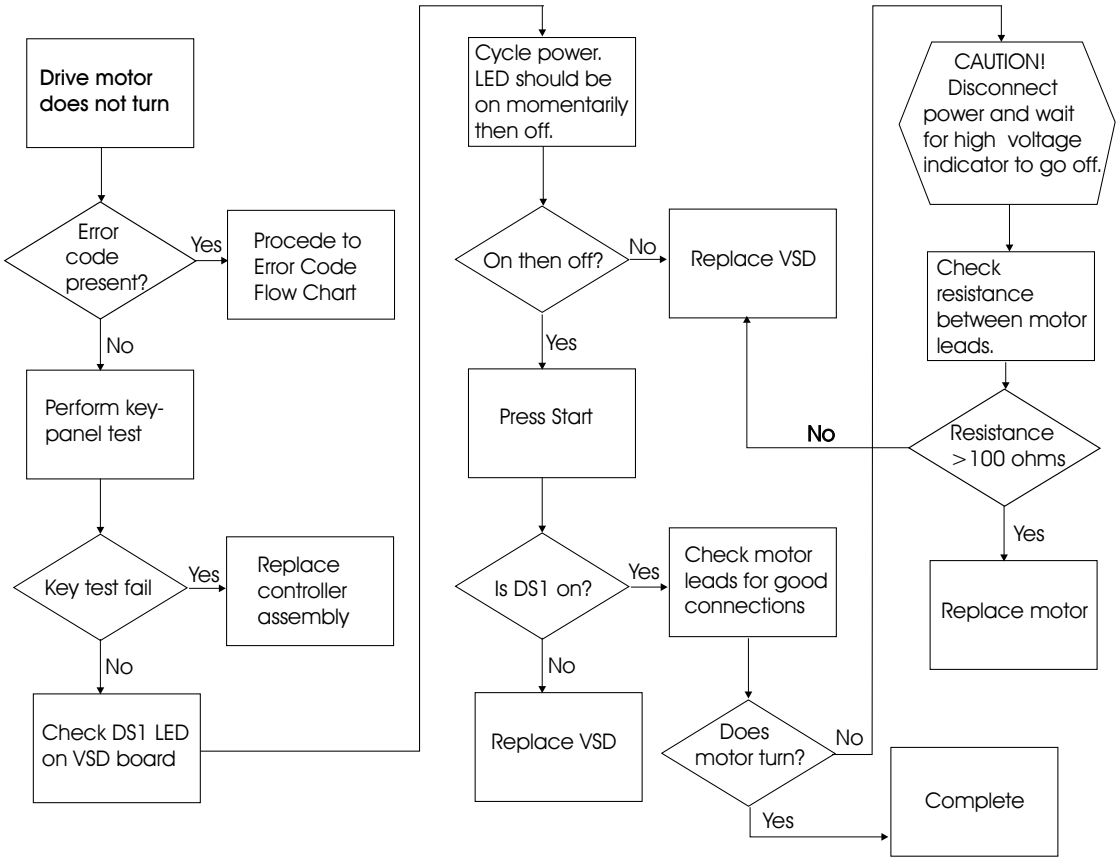


Communications Link

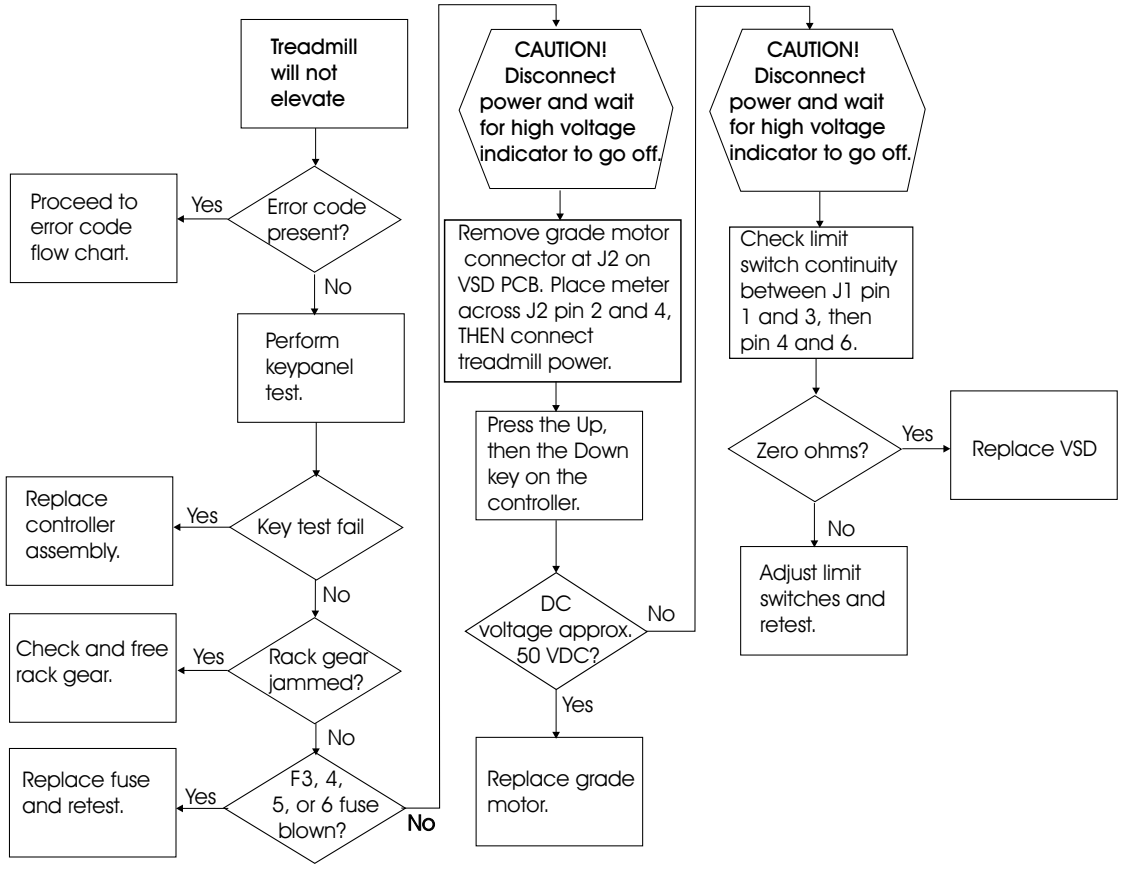
Error Code Flow Chart: E203



Motor Overcurrent


Drive motor does not turn
Error code present?
Yes
Procede to Error Code Flow Chart
No
Perform key-panel test
Key test fail
Yes
Replace controller assembly
No
Check DS1 LED on VSD board
Cycle power. LED should be on momentarily then off.
On then off?
No
Replace VSD
Yes
Press Start
Is DS1 on?
Yes
Check motor leads for good connections
No
Replace VSD
Does motor turn?
No
Yes
Complete
CAUTION! Disconnect power and wait for high voltage indicator to go off.
Check resistance between motor leads.
Resistance >100 ohms
No
Yes
Replace motor

Drive Motor


Treadmill will not elevate
Error code present?
Yes
Proceed to error code flow chart.
No
Perform keypanel test.
Key test fail
Yes
Replace controller assembly.
No
Rack gear jammed?
Yes
Check and free rack gear.
No
F3, 4, 5, or 6 fuse blown?
Yes
Replace fuse and retest.
No
CAUTION! Disconnect power and wait for high voltage indicator to go off.
Remove grade motor connector at J2 on VSD PCB. Place meter across J2 pin 2 and 4, THEN connect treadmill power.
Press the Up, then the Down key on the controller.
DC voltage approx. 50 VDC?
No
Yes
Replace grade motor.
CAUTION! Disconnect power and wait for high voltage indicator to go off.
Check limit switch continuity between J1 pin 1 and 3, then pin 4 and 6.
Zero ohms?
Yes
Replace VSD
No
Adjust limit switches and retest.

Grade Problems

4

Repair/Replacement and Calibration

The procedures that follow apply to the Hyperdrive ClubTrack, ClubTrack Plus, HR series, and MedTrack rehabilitation treadmills. The PCB assemblies are field-replaceable modules; no procedures are included for component-level repair. This includes:

- variable speed drive (VSD)
- enhanced display processor control unit (EDPU) used with the ClubTrack and MedTrack Rehab
- motivational control unit (MCU) used with ClubTrack Plus
- heart rate monitor (HRM) used with HR ClubTrack

This section is designed only for Quinton-authorized service personnel with proper training. There are no user-serviceable parts in the treadmills. Any attempt by non-Quinton-trained personnel to service the treadmill may void the warranty. For service information, call Quinton Technical Service: 1-800-426-0538.

Before servicing the treadmill, read the safety requirements listed in Appendix A.

➤ Do not use this manual when servicing Series 90™, Q-Series™, or ClubTrack 3.0™ series treadmills.

Cautions/Warnings

Electrical

Warning

- **High voltage is present beneath the treadmill hood while the treadmill is connected to a power source. Residual high voltage remains for a few minutes after power is removed. To prevent high-voltage electrical shock:**
  - **unplug the power cord and use caution every time you remove the hood.**
  - **before working on or around any electrical or mechanical component under the hood, wait at least two minutes from the time you unplug the power cord and be sure the red LEDs on the VSD board are off.**
- **Turn off the circuit breaker on the treadmill before connecting or disconnecting the treadmill to the wall outlet.**
- **The controller does not turn off electrical current to the treadmill.**

- **Be sure treadmill area is free of liquid spills before removing hood.**

Burns

Warning

- **Allow pulleys, motor, and other treadmill parts to cool sufficiently before touching them.**
- **Unplug the treadmill immediately if signs of overheating occur.**

Mechanical

Warning

- **Be sure the treadmill power cord is unplugged before working with chain, rack gear, belts, and pulleys.**
- **Secure long hair, loose clothing, and jewelry before working near the treadmill, particularly near walking surfaces and rotating parts.**
- **Before running the treadmill, check for worn parts which could break loose during service or operation.**
- **Keep fingers away from rotating parts.**
- **To avoid eye contaminants, clean away dust and debris from moving parts before servicing.**
- **Beware of sharp edges when replacing worn parts.**
- **Do not start the walk belt when someone is on the treadmill.**
- **Improper lifting can cause back strain. It also can cause injury to others if the treadmill is dropped. Lifting the treadmill requires at least two people.**

Tools

- Phillips and flat blade screwdrivers
- Hex socket wrenches: 5/32 -in, 9/16 -in, 7/16 -in, 1/2-in, 5/16 -in
- 11/32 -inch nut driver
- Heyco® strain relief pliers for replacing hard-wired power cord
- 1/2-inch crowfoot open-end wrench for removing drive motor
- Torque wrench for rack wheel replacement, 46± 4ft-lbs
- Frequency counter
- Tachometer
- Wooden blocks (2" x 4" x 6" long)
- Belt tension calipers P/N 30113-001 (optional)
- Masking tape or heavy pencil

➤ Although some procedures are used for several applications (removing the hood, for example), each procedure is explained only once. Reference procedures under their headings for subsequent applications.

➤ All references to front, rear, left, and right are given as though you were facing the controller while walking on the deck.

Field Functional Tests

You *must* perform a field functional test after any of the procedures in this chapter are performed. The applicable test is specified after each section in this chapter. Appendix D, *Field Functional Tests,* contains complete test instructions.

Warning

The VSD PCBA generates high voltage, which is present whenever DS4 and DS5 are illuminated. Do not touch the VSD PCBA until DS4 and DS5 have gone out. Resistors on the PCBA bleed off the high voltage in approximately two minutes.

Removing Treadmill Hood

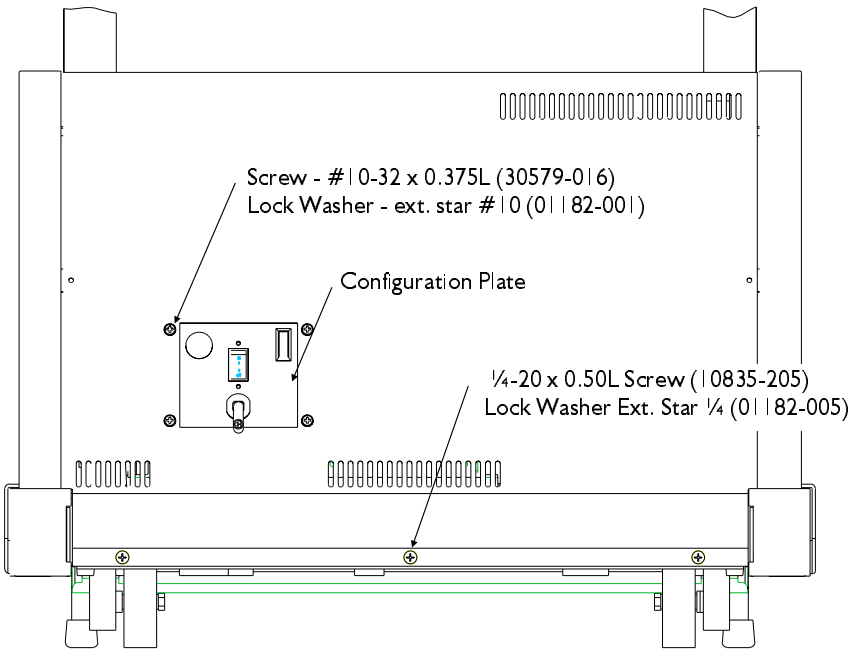
1. For your convenience in working, elevate the treadmill to its maximum height if possible.
2. Turn off the circuit breaker on the treadmill and unplug the treadmill from the power outlet.

Warning

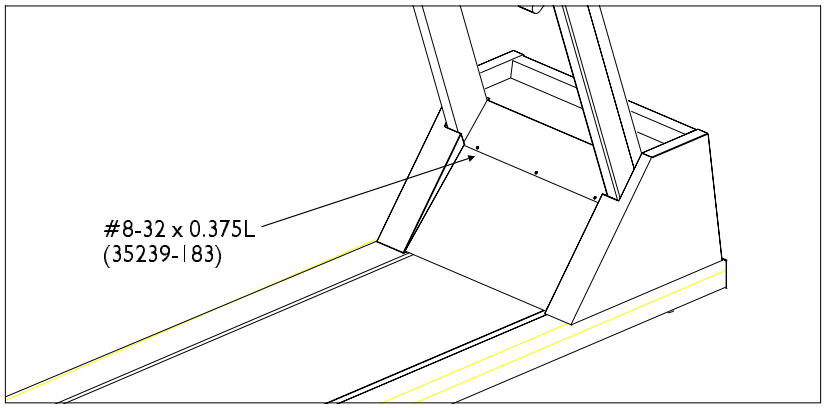
To prevent high voltage electrical shock: Before working on or around any electrical or mechanical component under the hood, wait at least two minutes from the time you unplug the power cord.

<u>International units:</u> Disconnect the power cord from the configuration plate.

3. Use a Phillips screwdriver to remove the four screws from the configuration plate.
4. Remove the three ¼-20 Phillips-head screws located under the label panel on the front of the hood.


Screw - #10-32 x 0.375L (30579-016)
Lock Washer - ext. star #10 (01182-001)
Configuration Plate
¼-20 x 0.50L Screw (10835-205)
Lock Washer Ext. Star ¼ (01182-005)

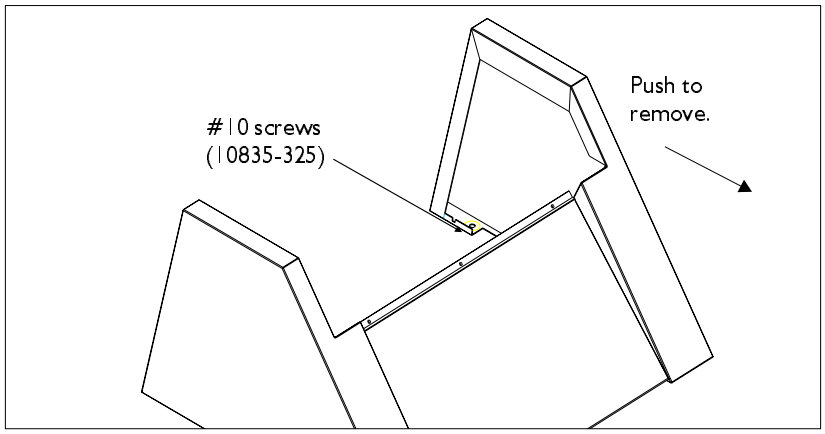
5. Remove the three #8 Phillips-head screws located on the back of the hood, above the kick plate



6. Grasp the front section of the hood cover at the top and bottom center. Pull and lift to remove while feeding the power cord through the hood cover opening.

7. Use a long screwdriver to remove the two screws holding the hood to the front of the siderails.

   International units: Remove the #10 screws that hold the hood to the upright.



8. Gently tap the hood a half inch towards the rear until the rear screws disengage from the key slots.

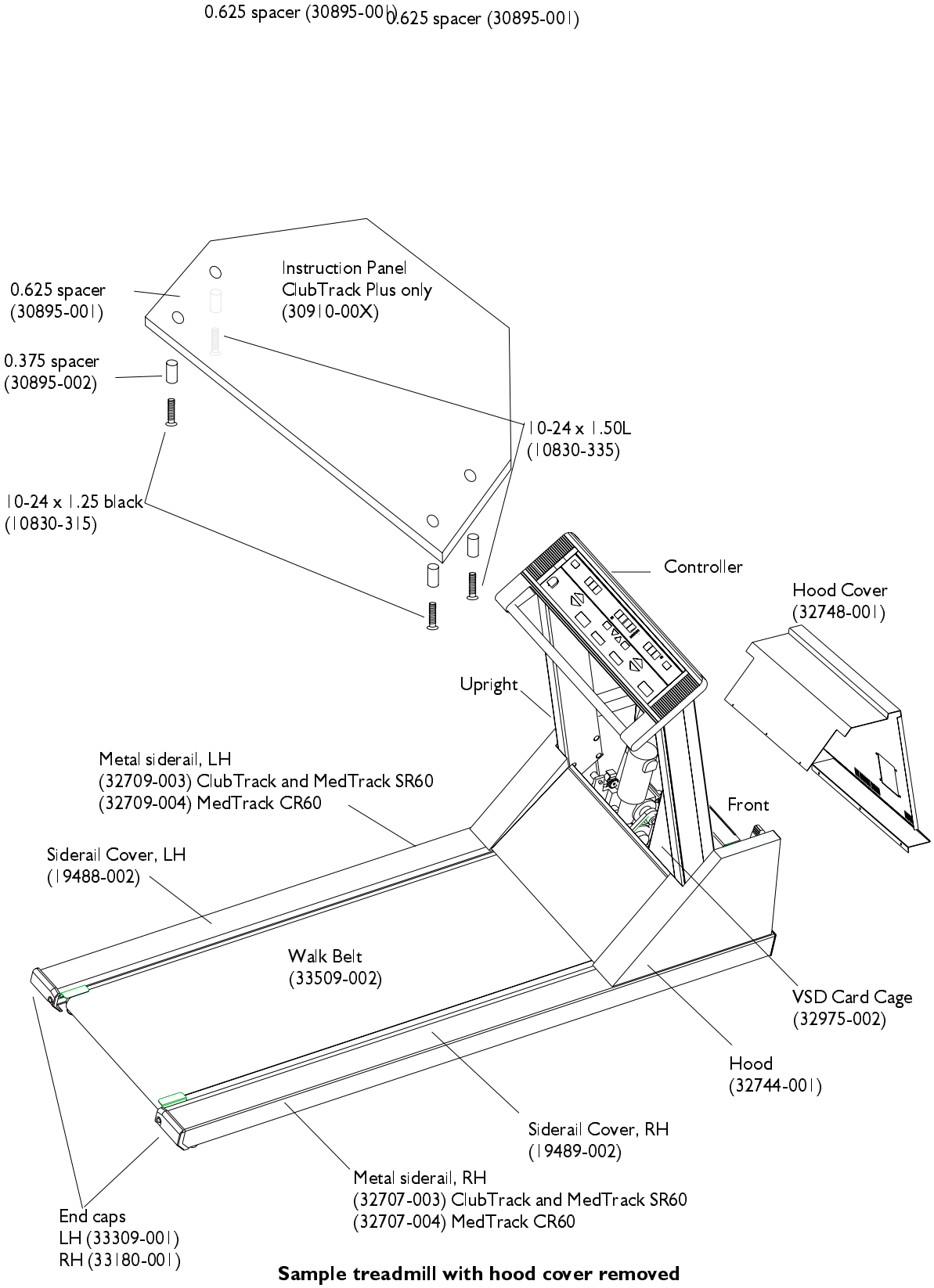
9. Spread the sides of the hood slightly apart to clear the uprights. Tilt the hood upward, then slide it back and lift it off the treadmill.

   ➤ Recommended: Vacuum hood area before replacing hood and applying power. Be careful near VSD card cage. Do not damage VSD board.

10. To replace the hood, follow steps 3-9 in reverse order.

Field Functional Test

To verify that the treadmill is operating properly, perform Field Test No. 1. See Appendix D, *Field Functional Tests,* for specific instructions.

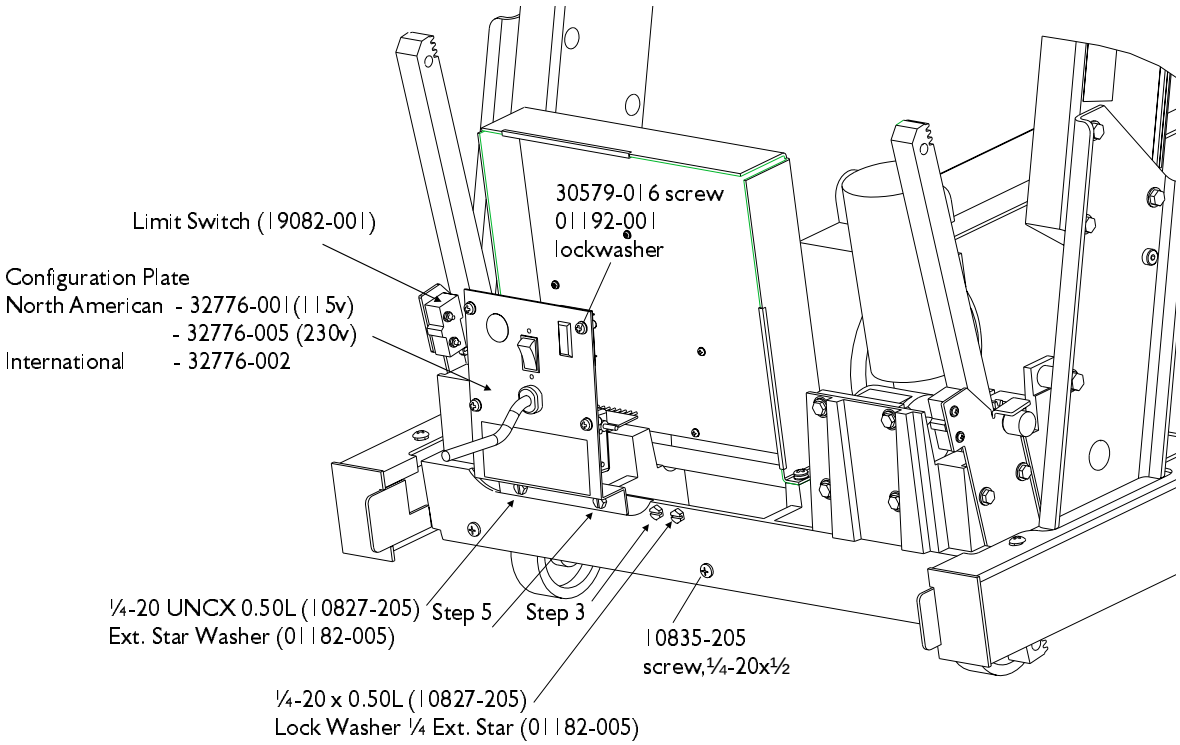


Sample treadmill with hood cover removed

Replacing the Configuration Plate

On North American units, the configuration plate module includes the power cord, which is attached to the plate. On international units, the power cord is removable and is not part of the configuration plate module.

1. Turn off the treadmill circuit breaker, then remove the power cord from the power outlet.
2. Remove the hood as previously described.
3. Remove the two ¼-20 hex head screws that attach the power cord ground wires to the headframe. (They are located in the center of the headframe. The ground is marked with a ground symbol.)
4. Unplug the wires from the VSD board (North American units: 3 wires (115v) or 2 wires (230v)), International units: 2 wires). Note the wire colors and connection points.
5. Remove the two ¼-20 hex-head screws holding the configuration plate to the headframe. **Do not let the plate fall into the VSD PCBA.**
6. Replace the configuration plate module following Steps 2 through 5 in reverse order.



Field Functional Test

To verify that the treadmill is operating properly, perform Field Test No. 2. See Appendix D, *Field Functional Tests* for specific instructions.

Replacing the Power Cord

Hard-wired Cords

Tools: Heyco strain relief hand pliers

1. Remove the configuration plate as described above.
2. Use strain relief pliers to squeeze the strain relief on the power cord and pull it free of the configuration plate.
3. Clip the power cord wire ties.
4. Remove the two hex nuts holding the power cord to the line filter: the hex nuts are behind the configuration plate, down and to the right.
5. Remove the groundwire.
6. Pull the power cord out of the configuration plate.
7. Feed the new cord into the configuration plate and reverse the procedure by following Steps 4 through 1.
   - Twist the power cord leads before connecting.
   - Connect the white wire to the bottom connector.

Detachable Cords

(International units): Unplug the power cord from the connector on the configuration plate and plug in the new cord.

Field Functional Test

To verify that the treadmill is operating properly, perform Field Test No. 2. See Appendix D, *Field Functional Tests* for specific instructions.

Replacing the VSD Board/Card Cage Assembly

The VSD board is installed within the card cage located in front of the drive motor. The board alone is not field replaceable; you must remove the card cage/board assembly and replace it with another card cage module.

1. Turn off the controller and the treadmill circuit breaker, then unplug the power cord from the power outlet.
2. Remove the hood as previously described.

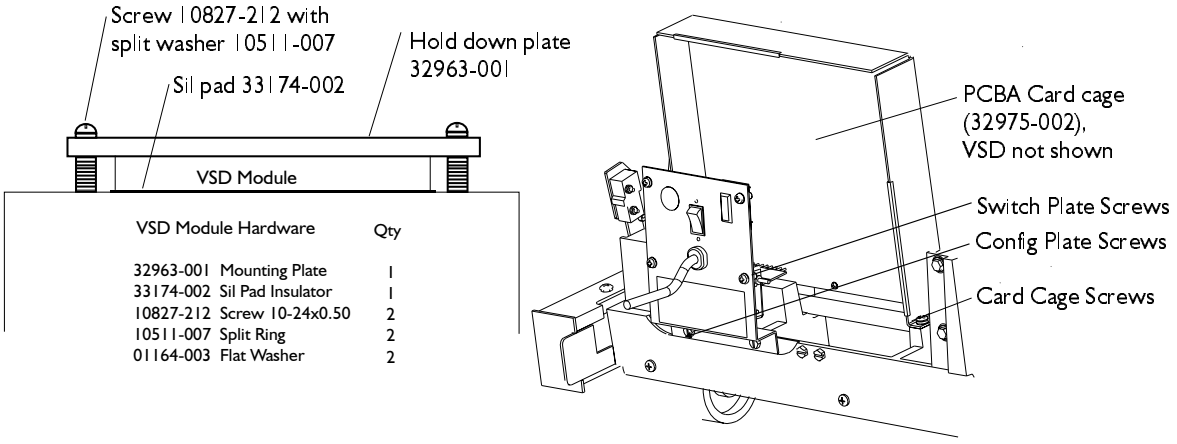
To prevent high voltage electrical shock: Before working on or around any electrical or mechanical component under the hood, wait at least two minutes from the time you unplug the power cord and be sure the red LEDs on the VSD board are off.

3. Disconnect the controller cable and the groundwire from the VSD board.

4. Remove the two screws that hold the configuration plate to the headframe; the screws are located below the plate. Move the plate out of the way.

   ➤ IMPORTANT: In the following steps, note the connection points and the colors of the wires as you remove them from the VSD board. All of the wires are harnessed. Cut the plastic ties to free the wires as necessary. Reference wiring schematic.

5. Unplug the grade motor wires from the VSD board.
6. Unplug the isolation transformer wires.
7. Unplug the non-isolated transformer wires.
8. Unplug the grade potentiometer wires. Clip the plastic ties around the cage only, not around the headframe.
9. Unplug the limit switch wires.
10. Unplug the drive motor wires.
11. Unplug the configuration plate wires.
12. Remove the two Phillips screws that hold the switch module plate to the headframe and remove the plate.


Screw 10827-212 with split washer 10511-007
Hold down plate 32963-001
Sil pad 33174-002
VSD Module
VSD Module Hardware Qty
32963-001 Mounting Plate 1
33174-002 Sil Pad Insulator 1
10827-212 Screw 10-24x0.50 2
10511-007 Split Ring 2
01164-003 Flat Washer 2
PCBA Card cage (32975-002), VSD not shown
Switch Plate Screws
Config Plate Screws
Card Cage Screws

13. Remove the four Phillips screws holding the card cage.
14. Remove the VSD/card cage assembly and return it to Quinton.
15. Replace the sil pad for the switching module before installing the new card cage.
16. Reassemble in reverse order.

Caution

Use caution when reassembling the hold-down plate for the switching module. Alternate torquing the screws just until the split lock washer is compressed. Over-torquing the screws will damage the module.

Field Functional Test

To verify that the treadmill is operating properly, perform Field Test No. 2. See Appendix D, *Field Functional Tests* for specific instructions.

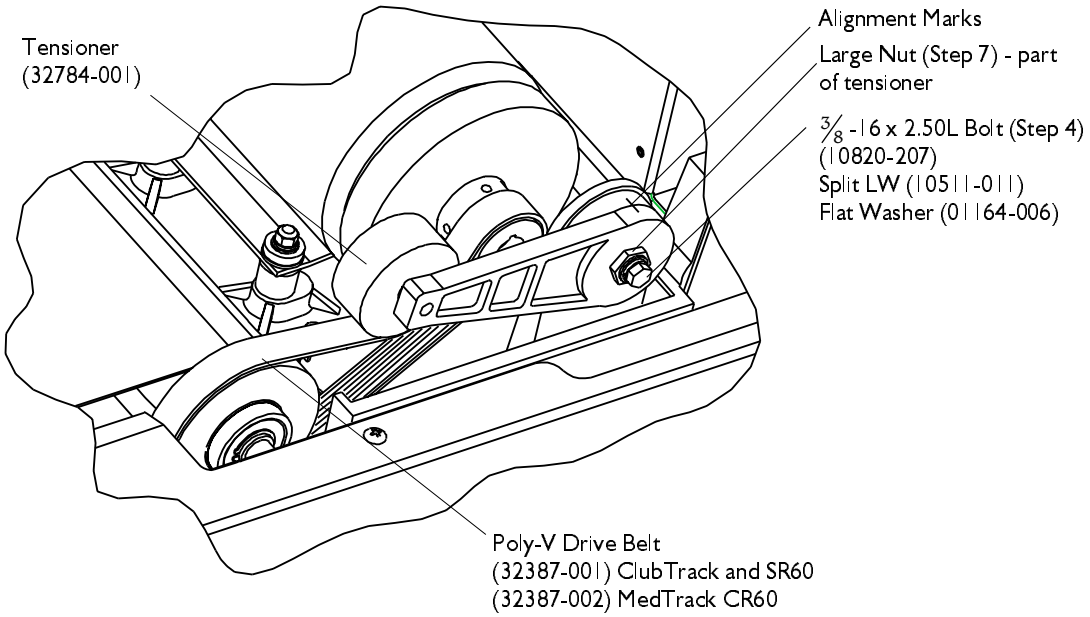
Replacing the Tensioner

The tensioner may need to be replaced if the poly-V belt slips, if the idler pulley bearing makes noise, or if the tensioner roller is damaged.

Warning

Do not attempt to disassemble the tensioner. The internal springs are tightly compressed and could cause injury if released.

1. Turn off the controller and the treadmill circuit breaker, then unplug the power cord from the power outlet.



2. Remove the hood as previously described.
3. Use a 9/16-inch hex wrench to remove the 3/8-inch bolt from the tensioner. Remove and discard the old tensioner.
4. Be sure the belt is centered on the pulleys.
5. Place the new tensioner onto the headframe in the same position as before and *loosely* bolt it to the headframe.
6. Use either a 15/16-inch open-end wrench or a large adjustable wrench to turn the *large* nut on the tensioner counter-clockwise; put tension on the poly-V belt until the two lines on the tensioner line up. Tighten the 3/8-inch bolt to 19 foot-pounds torque.
7. Replace the hood.

Field Functional Test

To verify that the treadmill is operating properly, perform the following functional tests:

Test Speed Operation

1. Place a chalk mark or piece of tape on the walk belt across the direction of travel.
2. Place another mark or piece of tape on the top of the siderail cover.
3. Start the walk belt and increase its speed to 4.0 mph.
4. Count how many times the belt rotates in 2 minutes. This should be 62 ± 3 revolutions for all treadmill models.

ClubTrack®, ClubTrack Plus™, HR ClubTrack™, HR ClubTrack Plus, MedTrack® SR60

5. Increase the walk belt speed to 10.0 mph.
6. Count the number of belt revolutions in 2 minutes. This should be 155 ± 3 revolutions.

MedTrack® CR60

5. Increase the walk belt speed to 7.2 mph.
6. Count the number of belt revolutions in 2 minutes. This should be 112 ± 3 revolutions.

If any of the measurements are not accurate, refer to *Replacing the Tensioner* and/or *Adjusting the Walk Belt* in this chapter.

7. Ensure that the speed will traverse from minimum to maximum and back.

Walk Belt Test Procedure

1. With the walk belt speed at minimum, walk on the treadmill.
2. Grasp the handrail and resist the motion of the walk belt. If slippage is detected, determine if the walk belt or poly-V drive belt is the cause. Correct as necessary.
3. Stop the walk belt.

Shut Down the Treadmill

Turn off the circuit breaker, disconnect the power cord from the outlet, and place the treadmill back in service.

Replacing the Poly-V Drive Belt

1. Remove the hood as previously described.

The drive belt tensioner is spring loaded. Do not let it snap closed after removing the drive belt.

2. Loosen the belt tensioner by turning the ⅜-inch mounting bolt counter-clockwise, then pivot the tensioner away from the belt.
3. Remove the drive belt from the drive motor pulley.

4. Use a ½ -inch socket wrench to remove the end cap from each siderail.
5. Use a ½-inch wrench to remove the four $\frac{5}{16}$ -inch hex bolts that hold the two front-roller retainers to the frame. There are two bolts on each side of the roller assembly.
6. Slide the drive roller assembly to the left and remove the poly-V belt from the right side of the roller.
7. Replace with a new belt, then remount the front drive roller assembly. (When replacing the poly-V belt, be sure the belt is centered on the pulleys.)

Installing the Front Shaft Retainer

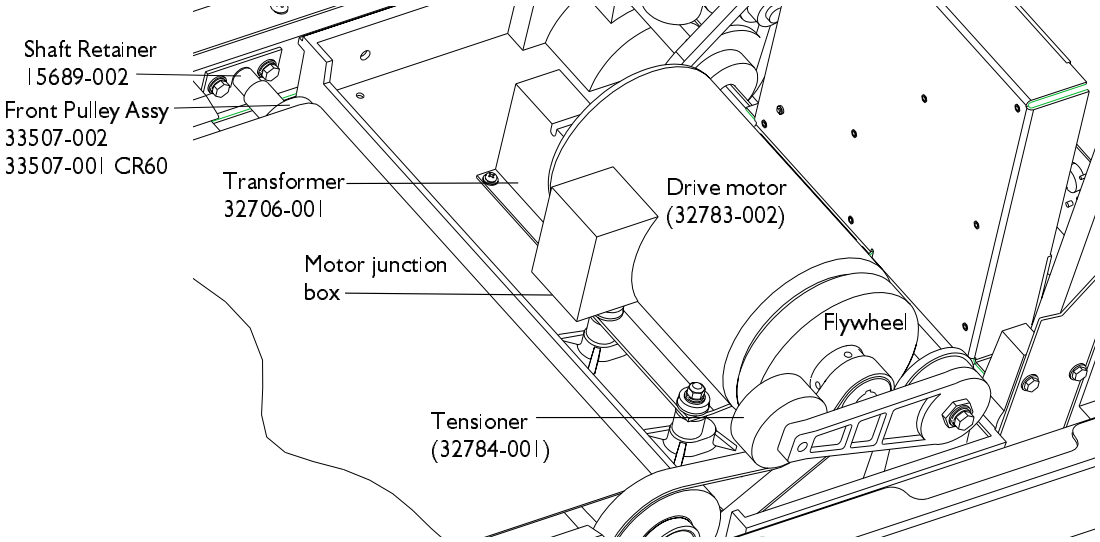
1. Install retainer with bolts moderately tight (180 in/lbs).
2. Using a large screwdriver or punch, tap the retainer down above each bolt to secure the shaft.
3. Assemble the treadmill following Steps 1-6 above in reverse order.
4. Tension the drive belt as described in *Replacing the Tensioner*.
5. Set the walk belt tension and tracking.

Field Functional Test

To verify that the treadmill is operating properly, perform Field Test No. 3. See Appendix D, *Field Functional Tests,* for specific instructions.

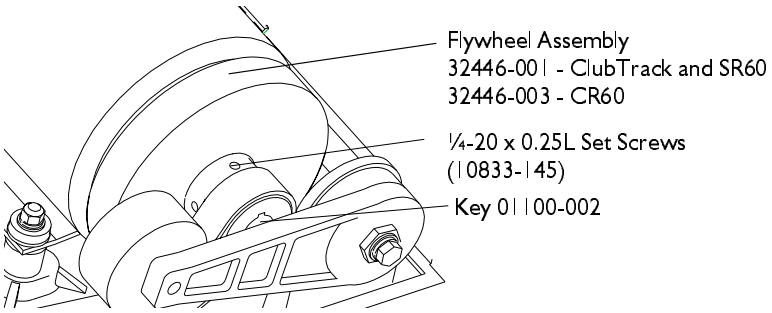
Replacing the Drive Motor

Replace the drive motor when the motor is inoperative: see *Drive Motor* flow chart in Chapter 3, *Troubleshooting*.



1. Turn off the treadmill circuit breaker and remove the power cord from the power outlet.
2. Remove the treadmill hood as previously described.
3. Release the drive belt tensioner and remove the poly-V belt from the motor drive pulley as previously described.
4. Remove the configuration plate as previously described.
5. Cut the wire ties that hold the drive motor cable to the headframe and disconnect the motor cable at the VSD board.
6. Remove the four hex nuts that hold the motor on the headframe. Note the arrangement of the isolation mounts.

   (You may need to use a ½-inch crowfoot, open-end wrench to remove the inner bolt near the card cage.)
7. Pull the motor off the headframe.
8. Loosen the two set screws on the flywheel/drive pulley and remove. Use a gear puller to pull the flywheel off the motor shaft.



9. Reinstall the flywheel onto the motor shaft and loosely tighten the setscrews.
10. Replace the motor by following Steps 4 through 8 in reverse order. Use Loctite 242 adhesive on the motor mount studs before installing new motor mounting nuts.

Caution

Tighten the motor mounting nuts until the lock washer flattens, then turn the nut ½ turn. Do not overtighten the nut.

   The new motor and flywheel assembly must be aligned with the front roller drive pulley. Use a straight-edged ruler placed on the outside of the front roller drive pulley to align the outside face of the motor drive pulley to within 0.020 inch. Tighten the set screws.
11. Replace the poly-V belt as previously described.
12. Replace the hood assembly as previously described.

Field Functional Test

To verify that the treadmill is operating properly, perform Field Test No. 3. See Appendix D, *Field Functional Tests* for specific instructions.

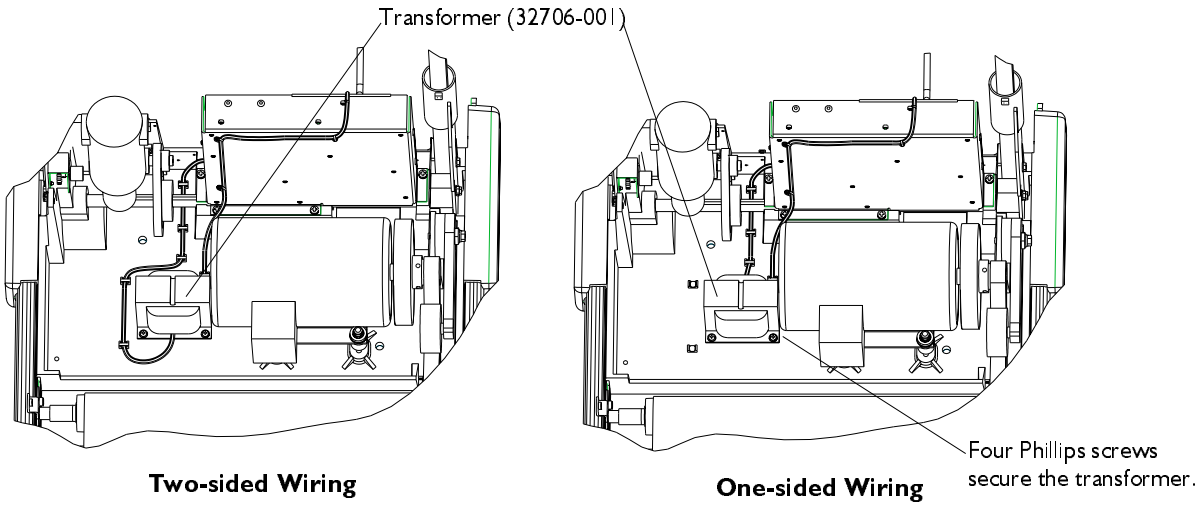
Replacing the Transformer

1. Turn off the treadmill circuit breaker and remove the power cord from the power outlet.
2. Remove hood as previously described.

Warning

To prevent high voltage electrical shock: Before working on or around any electrical or mechanical component under the hood, wait at least two minutes from the time you unplug the power cord and be sure the red LEDs on the VSD board are off.

3. Unplug the transformer wires from the VSD board. Note the wire colors and connection points. Cut the plastic cable ties that secure the transformer wiring.
4. Remove the Phillips-head screws that hold the transformer to the headframe.



Two-sided Wiring **One-sided Wiring**

5. Discard the old transformer. Replace with new one in reverse order.

   ➤ Wire routing depends upon the transformer you are installing (see figures above).

6. Replace the hood assembly as previously described.

Field Functional Test

To verify that the treadmill is operating properly, perform Field Test No. 2. See Appendix D, *Field Functional Tests,* for specific instructions.

Replacing the Grade Motor

➤ Place a clean sheet of cardboard or a clean rag on the treadmill deck before starting this procedure.

Do not elevate the treadmill.

1. Block the treadmill headframe securely with wooden blocks to ensure that the treadmill will not drop when you remove the grade motor.
2. Turn off the power and remove the hood as described.
3. Remove the cable ties that secure the grade motor wires, then disconnect the wire connector on the VSD board.
4. Remove the four screws that attach the grade motor to the headframe, then remove the motor.
5. Replace with a new grade motor, following Steps 3-4 in reverse order. Use a straight edge to align the sprockets.
6. Restore power to the treadmill and test the new grade motor.

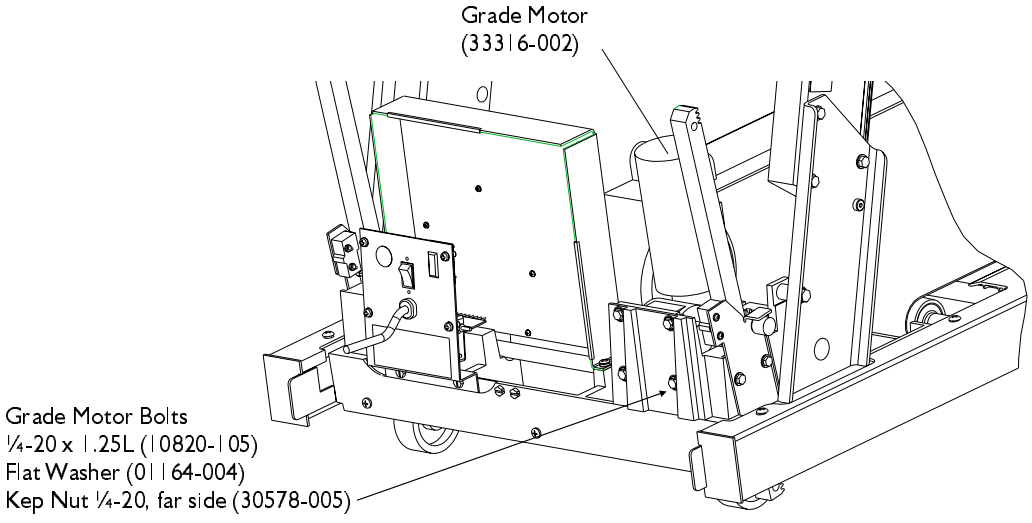
Warning

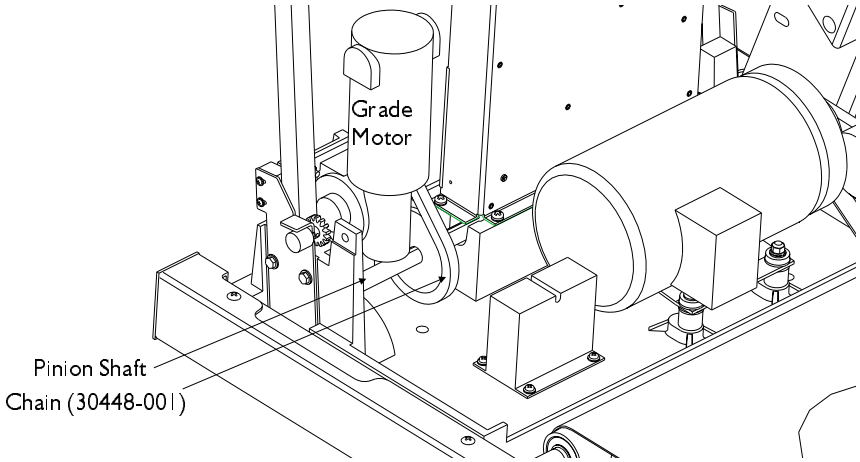
High voltage is present when the treadmill is plugged into a power source. Secure loose hair, clothing, and jewelry before working near rotating machinery.

Verify that:

a. it operates over the full range of 0-15%.

b. there is no binding when it moves up or down.





c. the grade motor chain is aligned correctly. A popping sound in the chain indicates that it is misaligned.

Field Functional Test

To verify that the treadmill is operating properly, perform Field Test No. 4. See Appendix D, *Field Functional Tests,* for specific instructions.

Replacing the Grade Motor Chain

To change the chain:

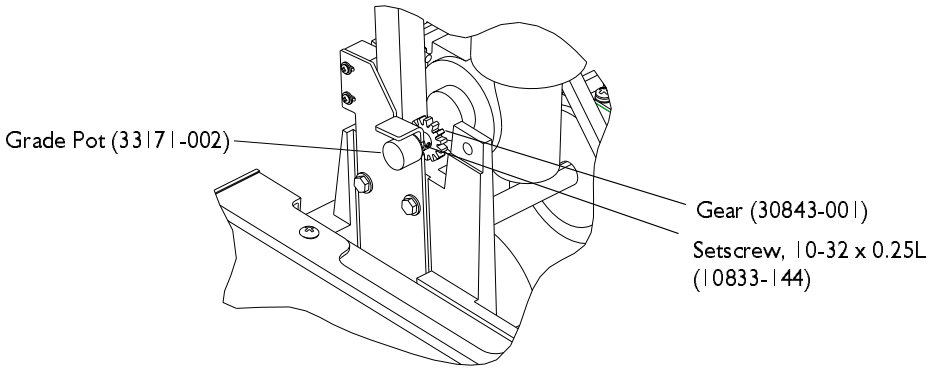
1. Support the head frame with six-inch wood blocks.
2. Use a flathead screwdriver to pop off the C-clip master link on the chain. (If the link is inaccessable, you will have to remove the motor.)
3. Slide out the link.
4. Install the new chain, aligning it correctly on the sprockets.

Field Functional Test

To verify that the treadmill is operating properly, perform Field Test No. 4. See Appendix D, *Field Functional Tests,* for specific instructions.

Replacing the Grade Potentiometer (POT)

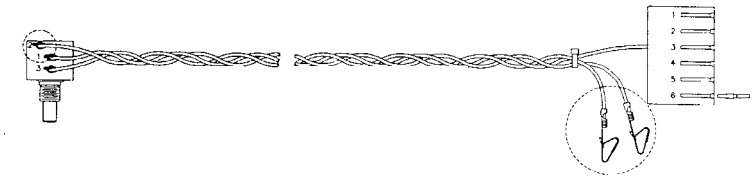
1. Turn off the treadmill circuit breaker and unplug the power cord. Remove the treadmill hood as previously described. Maintain caution throughout the following steps.
2. Release the grade pot setscrew.



3. Remove the grade pot gear.
4. Remove the nut that holds the grade pot to the bracket.
5. Clip the cable ties and unplug the cable from the VSD board.
6. Replace with a new potentiometer, then reassemble following Steps 2-6 in reverse order. See *Grade Pot Wires* below.
7. Tighten the grade pot nut to 20 inch-pounds torque.
8. When the grade pot, wires, and setscrews are in place, calibrate the pot (see *Calibration Procedures,* page 4-33).

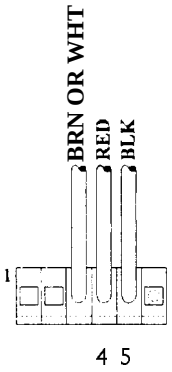
Grade Pot Wires

At the end of each grade pot wire is a pin with a small metal flange. The flange has a corresponding slot on the connector housing.



1. Insert each pin into the connector housing until it clicks slightly. The flanges will be visible through the slots in the housing.

   Red wire: slot 4
   Black wire: slot 5



2. Verify that the pin has engaged by pulling lightly on the wire.

➤ The slot positions above apply to the ClubTrack, ClubTrack Plus, MedTrack SR60 and MedTrack CR60.

Field Functional Test

To verify that the treadmill is operating properly, perform Field Test No. 4. See Appendix D, *Field Functional Tests,* for specific instructions.

Removing the Rack Gears

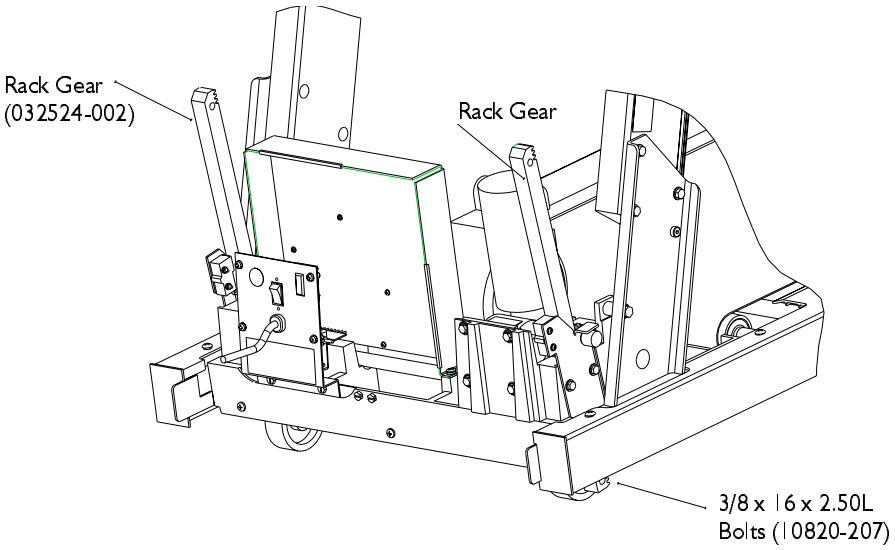
1. If the treadmill will change grade, set the grade to 12% (6-7°).
2. Lower the front of the headframe onto six-inch wooden blocks to take the weight off the wheels.
3. Turn off the treadmill circuit breaker and unplug the treadmill.
4. Remove the hood as previously described.
5. If the rack gear is jammed (no play in it), replace as described in *Replacing a Jammed Rack Gear,* page 4-19.
6. Restore power to the treadmill and *decrease* grade until the wheels are approximately half inch off the floor.
7. Remove the two $\frac{5}{16}$ - inch hex-head bolts holding the wheels to the rack gears. Note the arrangement of washers used as spacers.
8. Loosen the setscrew that holds the grade potentiometer (pot) gear and remove the gear.
9. Rotate the grade pot until a positive number appears in the grade display window. (Step 11 will not work until the number is positive.)

➤ In order to enter open loop, the grade must be positive.

10. Enter open-loop grade mode:
    a. Press **Power**.
    b. Simultaneously press **Stop**, **Faster**, and **Slower** on the controller to place the treadmill in service mode. The display will read **0.0 P000 0.0.**
    c. Simultaneously press **Faster**, **Up**, and **Down**. The display will read **0.0 P000 0.0.**
    d. Simultaneously press **Stop**, **Faster**, and **Slower** to exit service mode. The display should read **0.0 P555 0.0.** You are now in open loop mode.

    ➤ While in open loop mode, the treadmill takes about two seconds to react to a command.

11. (Requires two people) Hold the limit switches closed to let the rack gear travel beyond its normal range. Rotate the grade POT as required to maintain a positive grade display. Decrease grade until rack gears start bouncing on the pinion shaft.
12. Turn off the treadmill circuit breaker, then unplug the treadmill.
13. Lift rack gears straight out top.

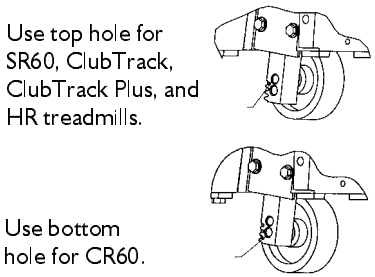


Reassembling the Rack Gears

➤ Install new rack gears simultaneously so that they will be parallel.

1. Restore power to the treadmill.
2. Enter open-loop grade mode as described above.
3. Insert the racks gears into the headframe.

4. Decrease the grade until the gears bounce two or three times. While increasing the grade, push lightly on the top of the rack gears. This should cause both rack gears to mesh in exactly the same place.
5. Run the rack gears down past the bottom of the headframe. Hold the limit switches closed to allow the rack gear to travel beyond its normal lower limits.
6. Check under the bottom of the headframe to verify that the rack gears are meshing properly. The gears should protrude an equal distance.
7. Run the rack gears down until there is enough room to replace wheels.
8. Replace the two bolts that hold the wheels to the rack gears. Be sure to:
   a. replace washers used as spacers in the correct arrangement.
   b. Install wheel bolts in the proper holes.



   b. torque the bolts tightly to 46 ft-lb +4 ft-lb.
10. Increase the grade until the wheels touch the floor.
11. Grease rack gears with wheel bearing grease.
12. Remove the blocks that support the headframe.
13. Reinstall the grade pot gear.
14. Calibrate the grade potentiometer.

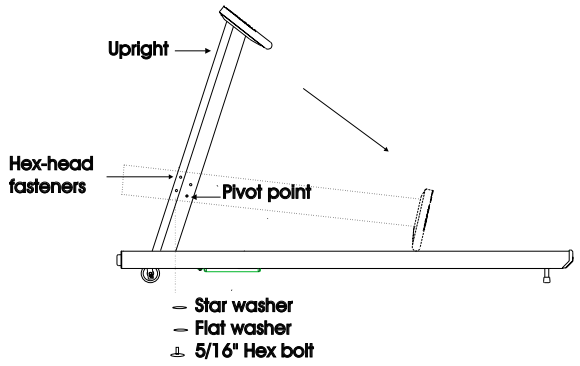
Field Functional Test

To verify that the treadmill is operating properly, perform Field Test No. 4. See *Appendix D, Field Functional Tests,* for specific instructions.

Replacing a *Jammed* Rack Gear

1. Turn off the treadmill circuit breaker and unplug treadmill.
2. Remove the hood as previously described.
3. Securely block the headframe with wooden blocks to take the weight off the wheels.

4. Shake each gear lightly at the top to determine which rack gear is jammed. If there is no play in a rack gear, it is jammed.
5. Remove the rack gear wheels from the rack gear.
6. Remove the upright assembly:



   a. Unbolt the six hex-head fasteners to let the treadmill uprights pivot. Note the order of the washer placement for reinstallation: the star washer is next to the upright bracket.
   b. Carefully lower the upright assembly onto the walk deck.
   c. Disconnect the controller cable and the ground wire from the VSD board.
   d. Use a $\frac{3}{16}$ - inch Allen wrench to remove both pivot bolts from the two upright assemblies, then remove the assembly.
7. Remove the treadmill walk belt and deck as previously described.
8. Use a $\frac{9}{16}$ - inch socket wrench with a 6 inch extension to remove the two hex-head bolts securing each siderail to the headframe. Reach the bolts through the holes in the siderail.

   ➤ If you are replacing only one rack gear, it is necessary to remove only the siderail closest to that gear.

9. Remove the grade pot gear. Remove the four bolts that hold the rack gear cover plate in place and move it out of the way.
10. Slide the rack gear out sideways.
11. Inspect the gear on the pinion shaft. If it is damaged, replace *both* the rack gear and the pinion shaft as described below.
12. Bolt the rack gear cover plate back into place.
13. Reassemble the siderails, upright assembly, and walk belt.
14. Restore power and decrease the grade to run the other rack gear out the top as previously described.
15. Reassemble the rack gear as described above.

16. Calibrate the grade potentiometer (see *Calibration Procedures* at end of chapter).

17. Test the treadmill grade. Verify that:

    a. it operates over the full range of 0-15%.

    b. there is no binding when it moves up or down.

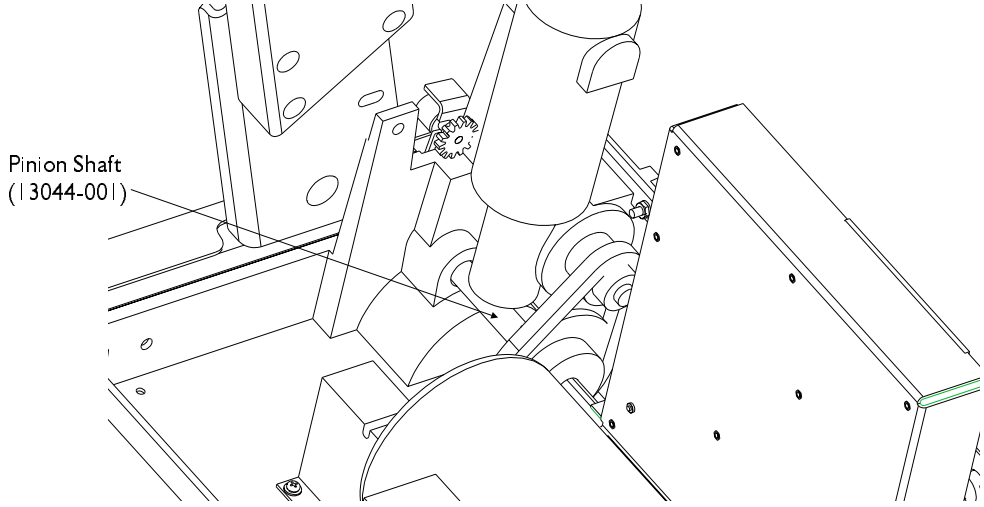
    c. the grade motor chain is aligned correctly. A popping sound in the chain indicates that it is misaligned.

Field Functional Test

To verify that the treadmill is operating properly, perform Field Test No. 4. See Appendix D, *Field Functional Tests,* for specific instructions.

Replacing the Pinion Shaft

1. Remove the right siderail, then remove the rack gear as previously described in *Replacing a Jammed Rack Gear.*



2. Restore treadmill power, then use the grade motor to turn the pinion shaft until the setscrew on the grade sprocket is visible.

3. Turn off the power and treadmill circuit breaker, then unplug the treadmill.

4. Loosen the setscrews from the grade sprocket.

5. Remove the grade motor chain as described previously.

6. Slide the pinion shaft out.

7. Slide the new pinion shaft into place: be sure to reinstall the grade sprocket while installing the pinion shaft.

8. Replace the rack gear cover plate.

9. Align the grade sprocket and grade motor sprocket, then tighten the setscrew on the sprocket.
10. Replace the grade motor chain as described.
11. Reassemble the siderails, uprights, and walk belt.
12. Reassemble the rack gear.
13. Adjust the walk belt tension.
14. Calibrate the grade potentiometer (see *Calibration Procedures*, page 4-33).
15. Test the treadmill grade. Verify that:
    a. it operates over the full range of 0-15%.
    b. there is no binding when it moves up or down.
    c. the grade motor chain is aligned correctly. A popping sound in the chain indicates that it is misaligned.

Field Functional Test

To verify that the treadmill is operating properly, perform Field Test No. 4. See Appendix D, *Field Functional Tests,* for specific instructions.

Adjusting the Grade Limit Switches

Grade limit switches prevent the treadmill from exceeding the preset maximum grade. When a roller on the limit switch reaches a trigger in each rack gear, a lever moves outward, opening the switch and stopping the grade motor. Two grade limit switches, one on each side of the treadmill, are mounted on brackets attached to the front of the headframe.

➤ Grade limit switch settings are preset at the factory and normally do not require adjustment. They should be adjusted if the rack gear is changed.

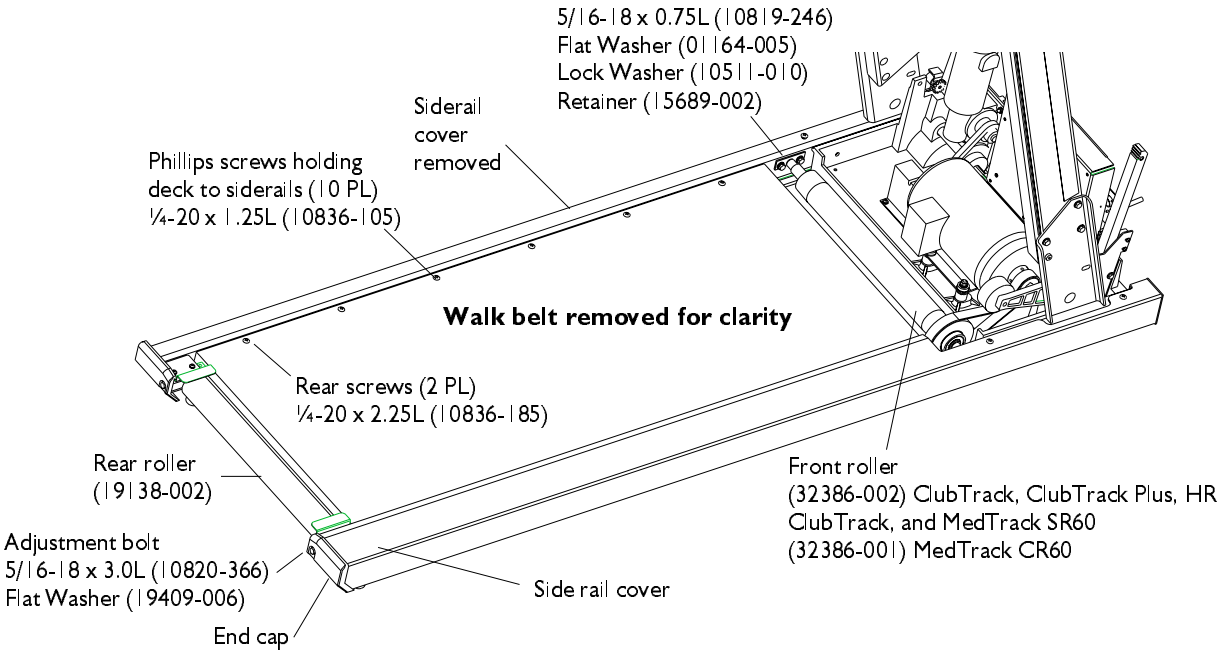
1. Turn off the treadmill circuit breaker, then unplug the power cord from the power source. Remove the hood as previously described.
2. Loosen, but do not remove, the two Phillips screws that secure each grade limit switch to its bracket.
3. Pivot the switch on the upper screw toward then away from the rack gear. You should hear a click as the switch opens or closes.
4. Set the switch wheel on a flat part of the rack gear, then pivot the switch toward the rack gear just until it stops. Tighten both screws.
5. If required, repeat Steps 2-4 for the other grade limit switch.
6. Replace the treadmill hood.

7. Operate the treadmill to verify that it reaches the upper and lower grade limits (15% and 0%).

Field Functional Test

Ensure that the grade will traverse from minimum to maximum and back.

Walk Deck Assembly


5/16-18 x 0.75L (10819-246)
Flat Washer (01164-005)
Lock Washer (10511-010)
Retainer (15689-002)
Siderail cover removed
Phillips screws holding deck to siderails (10 PL) ¼-20 x 1.25L (10836-105)
Walk belt removed for clarity
Rear screws (2 PL) ¼-20 x 2.25L (10836-185)
Rear roller (19138-002)
Front roller (32386-002) ClubTrack, ClubTrack Plus, HR ClubTrack, and MedTrack SR60 (32386-001) MedTrack CR60
Adjustment bolt 5/16-18 x 3.0L (10820-366)
Flat Washer (19409-006)
Side rail cover
End cap

Replacing the Rollers

1. Turn off the treadmill circuit breaker and unplug the power cord. Remove the hood as previously described.
2. Remove the poly-V belt as described previously.
3. Lift the drive roller assembly out from under the walk belt.
4. Pull the walk belt towards the rear of the deck, then slide the rear roller assembly out from between the siderails toward the *rear* of the treadmill.
5. Replace the rollers and reassemble the treadmill following Steps 1-4 in reverse order. See *Installing the Front Shaft* earlier in this chapter.
6. Adjust the walk belt tension and tracking.

Field Functional Test

To verify proper operation, perform Field Test No. 3.
See Appendix D, *Field Functional Tests*, for specific instructions.

Replacing the Walk Belt or Deck

➤ All instructions are given as if you were exercising on the treadmill.

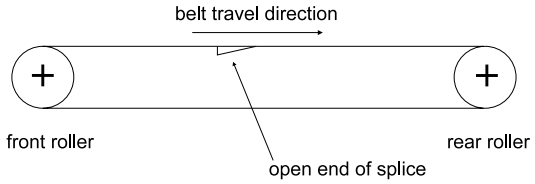
Whenever you install a new walk belt, you should install a new deck or turn over the existing deck (the deck is reversible). Inspect the compression mounts each time you replace the walk belt and replace if worn.

1. Raise the treadmill to its maximum height. Turn off the power, unplug the power cord, and remove the hood as previously described.
2. Remove the front and rear roller assemblies (see previous).
3. Remove the two Phillips screws from the siderails. These screws attach the hood to the siderails at the front of the hood.

   ➤ When replacing the screws, the gap between the siderail cover and the head of each screw must be 0.050 inch ± 0.010, approximately the thickness of a dime.

4. Grasp the left siderail cover at the rear of the treadmill, then pull it up and away from the treadmill to roll the cover off. Repeat for the right cover.
5. Remove the 12 screws that hold the deck to the siderails.
6. Remove the deck and belt.
7. Install a new belt with the logo side up, and reassemble the treadmill following Steps 1-6 in reverse order.

   ➤ When you install a new belt, verify that the closed end of the splice on the walk belt hits the roller first as the belt rotates.



8. Adjust the belt tracking and tension.

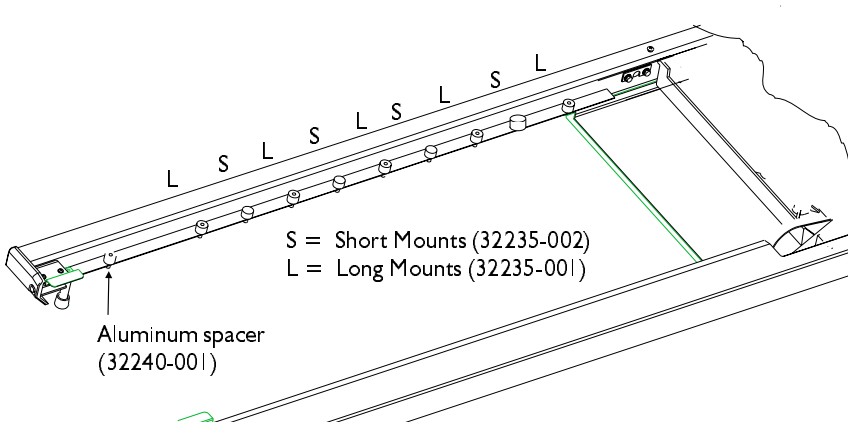
Field Functional Test

To verify that the treadmill is operating properly, perform Field Test No. 3. See Appendix D, *Field Functional Tests,* for specific instructions.

Replacing Compression Mounts

Inspect the compression mounts each time you change the walk belt. Replace the mounts if worn.

1. Remove the deck as previously described.
2. Locate and unscrew the compression mounts from the inside of each siderail; there are five long mounts and three short mounts on each siderail. The front two mounts are attached with hex nuts underneath.



3. Unscrew the mounts from each siderail and replace.
4. Replace the deck as previously described.
(Triple Flex Maintenance Kit p/n 33511-001)

Field Functional Test

To verify that the treadmill is operating properly, perform Field Test No. 3. See Appendix D, *Field Functional Tests,* for specific instructions.

Replacing the Deck

➤ The deck is reversible. You can turn it over if one side wears out.

Follow Steps 1-7 in the previous section, *Replacing the Walk Belt,* to remove and replace the deck.

Field Functional Test

To verify that the treadmill is operating properly, perform Field Test No. 3. See Appendix D, *Field Functional Tests,* for specific instructions.

Adjusting the Walk Belt

Walk Belt Tension

Adjust the tension:

- whenever the belt slips or moves unsteadily during operation
- after installing a new walk belt.

Two adjustment methods are specified. Method 1 is preferred, but two belt tension calipers (Quinton P/N 30113-001) are required.

➤ Both adjustment screws must be completely slack before starting this procedure.

Method 1 (Calipers available)

1. Turn both tension adjustment screws clockwise until most of the slack is removed from the belt.

   ➤ Do not stretch the walk belt at this point.

2. Position one caliper on each side of the belt, approximately 18 inches from the rear roller assembly.
3. Grasp the belt with one caliper clamp.
4. Pull the slack out of the belt with your fingers, then grasp the belt with the second clamp.
5. Repeat Steps 3 and 4 on the other side of the belt using the other caliper.
6. Set the dials of both calipers to zero.
7. Alternately tighten each tension adjustment screw in 0.1% increments until both sides read 0.4%. Ensure that the pointer is *exactly* on the line increment of the dial for each setting.

Do not overtighten the adjustment screws. Overtightening may damage the walk belt and roller assemblies.

8. Remove both gauges.
9. Adjust the walk belt tracking.

Method 2 (Calipers not available)

➤ Both adjustment screws must be completely slack before starting this procedure.

Use this method only if two belt adjustment calipers are not available. An accurate measuring device is required.

1. Turn both tension adjustment screws clockwise until most of the slack is removed from the belt. Do not stretch the walk belt.
2. Place two pieces of masking tape or two light pencil marks on the right edge of the belt exactly 50.000 inch apart.
3. Repeat Step 2 on the left edge of the belt.

4. Alternately turn the left and right adjustment screws one-half turn until the distance between the tape or pencil marks is 50.203 inch (±0.016) on both sides.

Caution

Do not overtighten the adjustment screws. Overtightening may damage the walk belt and roller assemblies.

5. Remove the tape.
6. Adjust the walk belt tracking.

Walk Belt Tracking

Adjust the tracking:

- whenever the belt moves to one side
- after installing a new walk belt
- each time you adjust the walk belt tension.

Warning

Do not stand on the belt when adjusting the tracking.

1. Adjust the walk belt tension as described on the previous page. Start the treadmill and let it run for at least one minute at minimum speed and grade. **Do not start the treadmill when some one is on the walk belt.**
2. Make the following adjustment to the *right* adjustment screw only:
   a. If the belt moves to the right, turn the screw ¼ turn *clockwise.*
   b. If the belt moves to the left, turn the screw ¼ turn *counter-clockwise.*
3. Run the treadmill for at least one minute to observe the belt tracking. Adjustments may take some time to become apparent.
4. Repeat Steps 3 and 4 as required.

Caution

Do not overtighten the adjustment screw. Overtightening may damage the walk belt and assemblies.

5. Increase the speed to 8 mph, then repeat Steps 3 and 4 as required.
6. Press **Stop Belt** to stop the treadmill, then press **Power** to turn it off.

Controller Assembly

The controller assembly includes the keypanel, the PCBA, and the enclosure that holds them to the treadmill:

- The ClubTrack and MedTrack CR60 and SR60 use the enhanced display processor unit (EDPU).
- The ClubTrack Plus uses the motivational control unit (MCU).
- The HR ClubTrack uses the heart rate monitor (HRM).
- The HR ClubTrack Plus uses the heart rate controller (HRC).

You must configure the controller correctly after installing (pg 4-30).

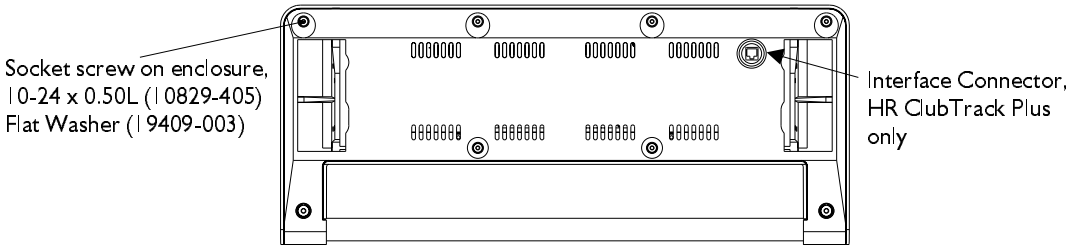
Removing the Enclosure

1. Turn the treadmill power off and disconnect the power cord from the power source.
2. Remove optional siderails if present.

Caution

While performing Steps 2-7, hold the enclosure securely, so that it does not fall while you are removing the screws and the handrail. Be careful not to scratch the uprights.

3. Use a $\frac{1}{8}$-inch Allen wrench to remove the six socket screws from the rear cover of the enclosure.



4. Use a $\frac{3}{16}$-inch Allen wrench to remove the two socket screws near the handrail
5. Slide the cover down the uprights to expose the PCBA.
6. Disconnect the controller cable, located on the left side of the PCBA.
7. Remove the hex nut that holds the ground wires to the chassis, then remove the wire.
8. Cut the cable tie that holds the cable to the controller.
9. Use a $\frac{5}{32}$-inch Allen wrench to remove the four socket-head screws that attach the controller assembly to each upright.
10. Lift the entire controller assembly clear of the uprights.
11. Reassemble following Steps 2-9 in reverse order.

Field Functional Test

To verify that the treadmill is operating properly, perform Field Test No. 5. See Appendix D, *Field Functional Tests,* for specific instructions.

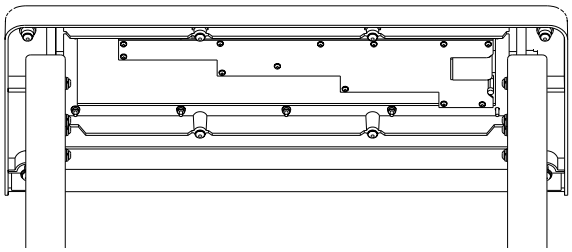
Replacing the PCBA

1. If possible, raise the treadmill to maximum height (15% grade).
2. Turn the treadmill off and disconnect the power cord from the outlet.
3. Use a ⅛ inch Allen wrench to remove the six screws from the rear panel of the enclosure.
4. Use a 3/16-inch Allen wrench to remove the two socket screws near the handrail
5. Slide the rear cover down the uprights.
6. Remove the hex nut that attaches the PCBA groundwire, then remove the wire.
7. Unplug the control cable from the PCBA. If you have the optional heart rate monitoring function, unplug the Polar PCB connector from the controller PCBA.

   HR ClubTrack Plus treadmills, p/n 00425:

   a. Disconnect the ribbon cable to the LCD display. Disengage the connector from the cable by sliding the outer connector housing away from the PCB. The housing will slide approximately 1/8 inch, then stop. Once the housing is in this position, the cable should extract without any resistance.

   b. Disconnect the fluorescent tube wires from the PCBA.
8. Remove the 12 Phillips screws that hold the PCBA to the key panel.



9. Lower the PCBA, then unplug the ribbon cable connecting it to the key panel.
10. Remove the PCBA from the enclosure.
11. Replace the PCBA and reassemble following Steps 3-8 in reverse order.

Replacing the Fluorescent Tube (HR ClubTrack Plus)

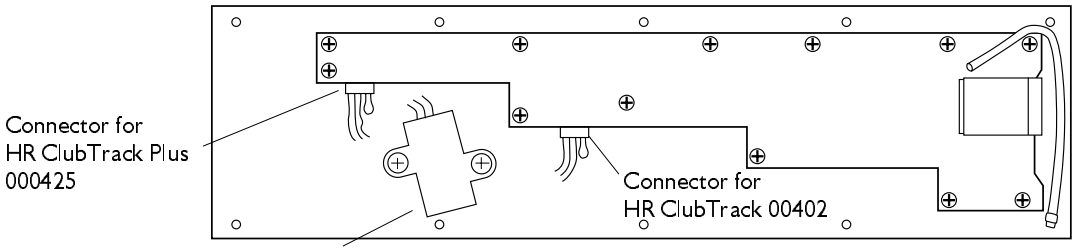
1. Remove the PCBA as described above (*Replacing the PCBA*).
2. Remove the LCD display from the keypanel and place it face up.
3. Remove the single screw that holds the white plastic fluorescent tube housing together.
4. Remove the fluorescent tube and replace with new tube.
5. Reassemble in reverse order.

Field Functional Test

To verify that the treadmill is operating properly, perform Field Test No. 5. See Appendix D, *Field Functional Tests,* for specific instructions.

Replacing the HR Receiver Assembly

1. Follow Steps 1 through 5 in *Replacing the PCBA*.
2. Unplug the receiver assembly from the controller assembly.



Orient HR receiver as shown.

3. Remove the two screws holding the assembly to the keypanel.
4. Remove the receiver assembly.
5. Use the two mounting screws to install the new receiver assembly. Reassemble the controller assembly.

Field Functional Test

To test for proper heart rate monitoring operation, follow the instructions in *Testing Heart Rate Accuracy*, Chapter 3 *Troubleshooting.*

Configuring the Controller

When you replace a controller, you must configure it to work with the specific treadmill.

Perform the following Steps to configure the treadmill.

1. Enter the service mode by simultaneously pressing **Stop Belt**, **Slower**, and **Faster**.
2. Choose the appropriate configuration number from the following:

Treadmill	Configuration No.
ClubTrack	CP3
ClubTrack Plus	CP3
HR ClubTrack	CP3
HR ClubTrack Plus	CP3
MedTrack SR60	CP3
MedTrack CR60	CP1
No configuration	CP- -

3. • For the HR ClubTrack Plus, enter the configuration by using the menu choices on the service mode screen.
   • For the other treadmills, hold down **Stop Belt** and press the **+** or **-** key until the correct configuration number appears in the center display.
4. Press **Select** to store the configuration.

   (For the HR ClubTrack Plus, select the *Set Screen Contrast* screen and use the contrast up and down buttons to select the optimum contrast. Select *Enter* to save the value.)
5. Exit the service mode by simultaneously pressing **Stop Belt**, **Slower**, and **Faster**.

Field Functional Test

To verify that the treadmill is operating properly, perform Field Test No. 1. See Appendix D, *Field Functional Tests,* for specific instructions.

Removing the Keypanel

To remove the keypanel:

1. Remove the PCBA following the above procedure.
2. Remove the 10 hex nuts that hold the keypanel to the enclosure.
3. Lift the keypanel off the enclosure.

Replacing the Controller Cable

1. Disconnect the power and remove the hood as previously described.
2. Remove the controller assembly as previously described
3. Cut any cable ties that fasten the controller cable to the headframe.
4. Detach the cable ground wire at the VSD board.
5. Pull the cable up through the left upright to remove it.
6. Install a new cable following Steps 1-5 in reverse order.

Field Functional Test

To verify that the treadmill is operating properly, perform Field Test No. 5. See Appendix D, *Field Functional Tests,* for specific instructions.

Cumulative Use

The cumulative use feature lets you determine the amount of wear on the belt and motor by displaying the total distance or total time of use for each treadmill. This data can be useful for scheduling service.

See separate procedure below for HR ClubTrack Plus (p/n 00425).

➤ The cumulative time and distance are stored in the controller. Both values are zero if a new controller is installed. Loading a factory default program will reset the time and distance to zero.

Distance

To determine the total distance on each treadmill:

1. Press **Power** to turn on the treadmill controller.
2. Simultaneously press **Stop** and **Slower**.
3. Multiply the number that appears in the multifunction display by 10 to obtain the cumulative total in miles or hours.
4. Record the mileage and the date for your records.
5. Press **Clear** to reset the display for operation.

Time

To determine the total time of treadmill use:

1. Press **Power** to turn on the treadmill controller.
2. Simultaneously press **Stop** and **Faster**.
3. Multiply the number that appears in the center display by 10 to obtain the total number of hours of operation.
4. Record the total time and the date for your records.
5. Press **Clear** to reset the display for operation.

For HR ClubTrack Plus Treadmills only

➤ In the HR ClubTrack Plus, total time, total distance, and current distance are calculated and saved in the HRC; therefore, any controller replacement restarts the maintenance counters. Total time and distance are saved into non-volatile memory every time the stop belt function is activated.

To view cumulated time and distance, enter custom mode and select *Maintenance Information*. The screen shows the cumulated time and distance.

To open custom mode,

1. Turn the **Power** key off.
2. Press and hold the **Menu** key, then press **Power**.
3. Select *Maintenance Information.*

Limited Access Switch

If the limited access control is on, the treadmill will not operate unless the magnetic key is on the Quinton logo on the controller.

Disabling the Limited Access Switch

1. Remove the magnetic key and press **Power** to turn off the treadmill.
2. Simultaneously press and hold the **+**, **—**, and **Power** keys until the 8s on the display go off, then release the keys.

The control remains inactive, allowing unrestricted access, until you place the key over the logo again.

Calibration Procedures

Grade Potentiometer (Grade Pot)

Calibrate the grade pot whenever you replace the grade pot, either rack gear, or the pinion shaft.

1. Disconnect power and remove the hood as previously described.
2. Loosen the setscrew that holds the grade pot gear to the grade pot shaft.
3. Restore power to the treadmill. **Maintain caution when working near moving parts**.

   ➤ In order to enter open loop mode, grade must be positive.

4. Enter open-loop grade mode:
   a. Press **Power**.
   b. Simultaneously press **Stop**, **Faster**, and **Slower** on the controller to place the treadmill in service mode. The display will read **0.0 P000 0.0**.
   c. Simultaneously press **Faster**, **Up**, and **Down**. The display will read **0.0 P000 0.0**.
   d. Simultaneously press **Stop**, **Faster**, and **Slower** to exit service mode. The display should read **0.0 P555 0.0.** You are now in open loop mode.

   ➤ While in open loop mode, the treadmill takes approximately two seconds to react to a command.

5. Lower the grade until the treadmill is level. Measure from the bottom of the siderail to the floor at both the front and rear of the treadmill. Adjust the grade until both measurements are identical.
6. Rotate the grade pot shaft with a screwdriver until the grade display reads **0.0**.
7. Tighten the setscrew and verify that the display still reads **0.0**.
8. Press **Clear** to exit open-loop mode.
9. Verify that the treadmill operates through its full grade range (0-15%) and that the treadmill is nearly all the way to the top of the rack gear when the display reads 15%.
10. Turn the treadmill circuit breaker off, disconnect the power cord, and replace the hood.

Speed Calibration

The speed of the belt can be checked for accuracy. The display and control are digitally controlled and cannot be adjusted. See Step E of the Complete Field Functional Test in Appendix D*, Functional Field Tests.*

Grade Calibration

The treadmill grade is controlled through the grade pot and grade pot installation procedure and cannot be adjusted. See Step D of the Complete Field Functional Test in Appendix D, *Functional Field Tests.*

5

Preventive Maintenance

- **Before working on the treadmill or its components, turn off the treadmill circuit breaker and unplug the power cord.**
- **High voltages remain under the treadmill hood for a few minutes even after the plug has been removed.**
- **Secure long hair, loose clothing, and jewelry before working near the treadmill, particularly near the walking surface or pulleys.**
- **Do not permit anyone to stand on the treadmill belt when it is started.**

Recommended Service

With normal upkeep, no routine service is necessary. When service is required, repairs can be done to the modular level.

Routine Maintenance

Visual Inspection

Inspect the power cord and walking belt for wear.

- Check the position of the walking belt; be sure it is not rubbing against the frame. The belt should be centered on the deck within 0.25 inch; adjust if necessary.
- Check optional siderails to be sure they are fastened securely.
- Remove potential hazards from the treadmill area.

Cleaning the Exterior

Follow these steps to clean the treadmill after servicing or as required:

1. Elevate the treadmill to maximum height and vacuum the floor under it to prevent excess dust and dirt from interfering with operation.

2. Use a damp sponge to wipe the exteriors and walking belt; do not soak surfaces. Dry all surfaces thoroughly.

- **Never wipe the deck under the belt, even when replacing a belt. Wiping can ruin the surface.**
- **Do not use detergents or cleaning agents on any part of the deck.**
- **Do not let liquid enter the interior of the treadmill or controller.**

Vacuuming Under the Treadmill Hood

Accumulation of dust and dirt beneath the hood restricts the air flow needed to disipate heat from the drive motor and VSD board. To prevent damage to components, periodically vacuum the mechanical drive and the area behind the VSD board.

Frequency

Usage and environment determine how much dust accumulates and how frequently you need to vacuum the components. Inspect the internal components at least every six months. Adjust the inspection schedule as needed.

To avoid electric shock, turn off the treadmill circuit breaker and unplug the treadmill before removing the hood. Before working near components, wait at least two minutes from the time you unplugged the power cord. Be sure the red LEDs on the VSD board are off.

Use extreme caution to avoid physical damage to the internal components. Avoid static discharge, which can damage the electronic components.

1. Remove the hood as previously described (pg 4-3).
2. Vacuum the areas behind the VSD cage (deck side). Do not vacuum the VSD board.
3. Replace the hood.

Replacement Schedules

Replace belts if they are frayed or show excessive wear.

Heart Rate Monitoring Option

Cleaning

Clean the chest belt regularly with mild soap and water, then *dry thoroughly*—residual sweat and moisture keep the transmitter active and drain the battery in the transmitter. Do not use

abrasives or chemicals such as steel wool or alcohol as they can damage the electrodes permanently.

Battery

The estimated life of the belt transmitter is 2500 hours of use. For a replacement belt and for recycling the old transmitter belt, contact Polar Electro at 800/227-1314.

Storage

Store the belt in a warm, dry place away from direct sunlight. Do not store in plastic or other material that can trap moisture. **Do not store in soap and water bath.**

A

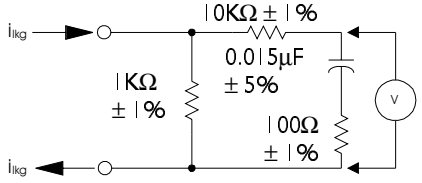
Safety Requirements

Read this manual in full before operating the treadmill.

- Do not start the treadmill when someone is standing on the belt.
- Keep speed and grade at the lowest settings when someone is getting on and off the treadmill.
- Keep the area underneath and around the treadmill clear.
- Before each use of this equipment, check the power receptacle for signs of damage. Do not operate the equipment if the integrity of these items is in question.
- To avoid potential safety and electrical problems, use parts and accessories that meet Quinton specifications.
- This equipment is classified Class I, Type B, ordinary equipment. Not protected against fluid ingress. Rated for continuous operation.
- Increased risk due to leakage current can result if this equipment is not grounded properly.
- The treadmill must be on an appropriate, dedicated electrical circuit. Nothing else should be connected to the circuit.
- **Failure to follow these guidelines can produce a serious or possibly fatal electrical shock hazard or other serious injury. Consult a qualified electrician as required.**

➤ Continuous A-weighted sound measurements taken over the speed range of an unloaded ClubTrack treadmill are less than 70dB(A).

For systems to be used in the U.S.: The American standard for chassis leakage current of electromedical apparatus when measured by interruption of the power ground (earth) conductor is 300mA. The current ANSI standard, ANSI/AAMI ES1-1993, contains the limits. The standard is also shown in the

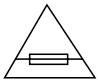


AAMI Standard test load (1mV=1uA)

National Fire Protection Association Standard for health care facilities, NFPA 99-1993. The leakage currents specified in the standards are for current frequencies up to 1KHz. The AAMI standard test load provides the proper attenuation for frequencies above 1 KHz. This load circuit, illustrated on the previous page, can be found in the referrenced ANSI standard.

Symbol Definitions

Quinton products display one or more of the following symbols. No one product displays them all.

	Attention: Consult accompanying documents		Earth ground (protective)
	Off (power disconnected from mains)		Type B equipment provides adequate protection against electric shock, particularly regarding allowable leakage current; reliability of the protective earth connection (when present)
	On (power connected to mains)		Type BF equipment contains an F-type isolated patient applied part providing a high degree of protection against electric shock
	Alternating current		Type BF equipment with defibrillation protection
	High voltage		Type CF equipment: contains an F-type isolated patient appliedpart and provides a degree of protection against electric shock higher than that for type BF equipment regarding allowable leakage currents
	Earth ground (functional)		Type CF equipment with defibrillation protection
	Replace fuse only as marked		Fuse
	Mains Power		Equipotentiality
	Warning	**T**	Timed fuse (slo-blo)
HZ	Hertz	**V**	Volts
A	Amperes	**VA**	Volt Amperes

B

Specifications

ClubTrack®(00377, 00402) and MedTrack® Rehabilitation Treadmills (00380, 00390)

PERFORMANCE	
Maximum Rated Load	ClubTrack & MedTrack SR: 320 lb (145 kg) MedTrack CR: 400 lb (181.4 kg)
Belt Speed Range: ± 0.2 mph (continuously adjustable)	ClubTrack & MedTrack SR: 1.0 to 12 mph (1.6 to 19.3 km/h) MedTrack CR: 0.6 to 7.2 mph (1.0 to 11.6 km/h)
Rate of speed change	Acceleration: ClubTrack & MedTrack SR: 1.0 to 12 mph in 35 secs MedTrack CR: 0.6 to 7.2 mph in 35 secs
Grade range ± 0.5%	0 to 15%
Rate of grade change	Club Track & MedTrack SR: 0 to 15% in 60 secs max with 320 lb user MedTrack CR: 0 to 15% in 60 secs max with 400 lb. user
PHYSICAL	
Weight	400 lb (181.4 kg)
Nominal walking surface	20 in. x 60 in. (51 cm x 152 cm)
Treadmill dimensions width x length x height	31 in. x 87.25 in. x 53 in. (78.7 cm x 221.6 cm x 134.6 cm) For MedTrack CR 60, add 0.5 in. (1.27 cm) to ht
Walking surface height from floor	6.0 in. (15.24 cm) For MedTrack CR 60, add 0.5 in. (1.27 cm)
Handrail height from walking surface	39 in. (99 cm)
ENVIRONMENTAL	
Temperature	Operating: 50 to 90°F (10 to 32°C) Storage: -13 to 122°F (-25 to 50°C)
Humidity (non-condensing)	Operating: 3 to 95% relative Storage: 3 to 95% relative
Atmospheric pressure	Operating: 8.60 to 15.0 psia, 445 to 775 mm Hg absolute Shipping & storage: 8.22 to 15.0 psia, 425 to 775 mm Hg absolute

POWER REQUIREMENTS			
Dash Number	**Voltage/Hz**	**Current Draw in Amps**	**Min. Branch Circuit Amps**
ClubTrack - P/N 00377			
-001	99 - 132V, 60Hz	20*	20
-002 through -006	198 - 250V, 50/60Hz	10	10
-007	90 - 132V, 50/60 Hz	20	20
-008	180 - 250V, 50/60Hz	10	10
-009	198 - 250V, 60Hz	10*	15
MedTrack CR - P/N 00380 **MedTrack SR - P/N 00390**			
-001	99 - 132V, 60Hz	20*	20
-002 through -006	198 - 250V, 50/60Hz	10	10
-007	90 - 132V, 50/60 Hz	20	20
-008	180 - 250V, 50/60 Hz	10	10
-009	198 - 250V, 60Hz	10*	15
HR ClubTrack - P/N 00402			
-001	99 - 132V, 60 Hz	20*	20
-002 through -006	198 - 250V, 50/60 Hz	10	10
-007	90 - 110V, 50/60 Hz	20	20
-008	180 - 250V, 50/60 Hz	10	10
-009	198 - 250V, 60Hz	10*	15
*Full-load current is computed as described in section 430-24 of the National Electrical Code.			
FUSE RATINGS			
F1 & F2	250Vac, 4A T, 5 x 20 mm (nominal)		
F3, F4, F5, & F6	250Vac, 2A T, 5 x 20 mm (nominal)		

ClubTrack® & MedTrack® Controllers

SPEED	3-digit display
Units	Miles per hour (mph) or kilometers per hour (km/h)
Range	ClubTrack and MedTrack SR: 0 to 12 mph (0 to 19.3 km/h) MedTrack CR: 0 to 7.2 mph (0 to 11.6 km/h)
Increment	0.1 mph
Rate of change	Two increments (or decrements) per second for the first three seconds, five per second thereafter until you either release the key or reach the high/low limit.
Accuracy	Within ± 0.2 mph (0.3 km/h) of actual speed during unchanging operation, 1 mph (1.k km/h) during speed decrease. Shows target, not actual, speed during speed changes.
GRADE	3-digit display
Units	percent
Range	0 to 15%
Increment	0.5%

Rate of change	Two increments (or decrements) per second for the first three seconds, five per second thereafter until you either release the key or reach the high/low limit.
Accuracy	Within ± 0.5% actual grade during unchanging operation
Multi-function Display	4-digit display. Displays exercise parameters, weight, and error messages
Elapsed time or countdown timer	Units: min:sec Range: 00:00 to 99:59 Increment: 00:01
Elapsed distance	Units: miles or kilometers Range: 0 99.9 miles or kilometers Increment: 0.001 from 0 to 9.999 mi or km, 0.01 from 10.00 to 99.99 mi or km
Pace	Units: minutes:second per mile or minutes:second per kilometer ClubTrack range: 5:00 to 60:00 min:sec/mi (3:07 to 37:16 min:sec/km) MedTrack range: 8:20 to 99:59 min:sec/m (5:11 to 62:08 min:sec/km) Increment: 00:01 Zero speed: when walk belt speed is zero, the pace display indicates "-.-"
Calories	Total calories expended Units: calories Range: 0.001 to 999.9 Increment: 0.001 from 0 to 9.999; 0.01 from 10 to 99.99; 0.1 from 100 to 999.9
Caloric rate	Caloric rate expenditure Units: calories/min Range: 0.001 999.9 Increment: 0.001 from 0 to 9.999; 0.01 from 10 99.99; 0.1 from 100 to 999.9
METS	Units: METS Range: 1.000 to 31.62 Increment: 0.001 from 1 to 9.999; 0.01 from 10.00 to 31.62
Heart rate (option)	Units: beats per minute Range: 50-225 Increment: 1
Scan	Cycles through parameters, displaying each sequentially for 3 sec
Weight	Default: 150 lb to 68 kg Minimum: 30 lb or 13 kg Maximum: 400 lb (181 kg) Increment: 1 lb or 1 kg

ClubTrack Plus® Treadmills (P/N 00382, 00425)

PERFORMANCE			
Maximum rated load	320 lb (145 kg)		
Belt speed range (continuously adjustable)	1.0 to 12 mph (1.6 to 19.3 k/h)		
Grade range	0 to 15%		
PHYSICAL			
Weight	400 lb (181.4 kg)		
Nominal walking surface	20 in. x 60 in. (51 cm x 150 cm)		
Treadmill dimensions width x length x height	31 in. x 87.25 in. x 53 in. (78.7 cm x 221.6 cm x 134.6 cm)		
Walking surface height from floor	6.0 in. 15.24 cm)		
Handrail height from walking surface	39 in. (99 cm)		
ENVIRONMENTAL			
Temperature	Operating: 50 to 90°F (10 to 32°C) Storage: -13 to 122°F (-25 to 50°C)		
Humidity (non-condensing)	Operating: 3 to 95% relative Storage: 3 to 95% relative		
Atmospheric pressure	Operating: 8.60 to 15.0 psia, 45 to 775 mm Hg absolute Shipping & storage: 8.22 to 15.0 psia, 425 to 775 mm Hg absolute		
POWER REQUIREMENTS			
Part number 00382-	**Voltage/Hz**	**Current Draw in Amps**	**Min Branch Circuit Amps**
-001	99 - 132V, 60 Hz	20*	20
-002 through -006	198 - 250V, 50/60 Hz	10	10
-007	90 - 132V, 50/60 Hz	20	20
-008	180 - 250V, 50/60 Hz	10	10
-009	198 - 250V, 60Hz	10*	15
*Full-load current is computed as described in section 430-24 of the National Electrical Code.			
FUSE RATINGS			
F1 and F2	250VAC, 4A T, 5 x 20 mm (nominal)		
F3, F4, F5, F6	250VAC, 2A T, 5 x 20 mm (nominal)		

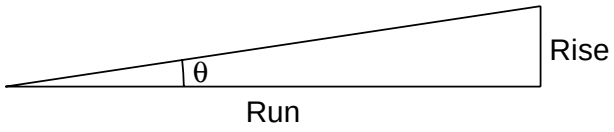
ClubTrack Plus® Controller (P/N 00382)

SPEED	(3-digit display)
Units	Miles per hour (mph) or kilometers per hour (km/h)
Range	1 to 12 mph, 1.6 to 19.3 km/h
Increment	0.1 mph
Accuracy	Within ± 0.2 mph (0.32 km/h) of actual speed during unchanging operation, 1 mph (1.6 km/h) during speed decrease. Shows target, not actual, speed during speed changes.
GRADE	3-digit display
Units	percent
Range	0 to 15%
Increment	0.5%
Accuracy	Within ± 0.5% actual grade during unchanging operation
MULTI-FUNCTION DISPLAY	Four-digit display. Displays exercise parameters, weight, digital timer, and error messages
Elapsed time or countdown timer	Units: min:sec Range: 00:00 to 99:59 Increment: 00:01
Exercise time	0:00 to 96:00 min:sec
Stage time	0:00 to 6:00 min:sec
Elapsed distance	Units: miles or kilometers Range: 0 to 99.9 miles or kilometers Increment: 0.001 from 0 to 9.999 miles or kilometers; 0.01 from 10.00 to 99.99 miles or kilometers
Pace	Units: minutes:seconds per mile or minutes:seconds per kilometer Range: 5:00 to 60:00 minutes:seconds per mile (3:07 to 37.16 min:sec/km) Increment: 00:01 Zero speed; when walk belt speed is zero, the pace display indicates "-.-"
Calories	Total calories expended or caloric rate expenditure Units: calories or calories/min Range: 0.001 to 999.9 Increment: 0.001 from 0 to 9.999; 0.01 from 10 to 99.99; 0.1 from 100 to 999.9
Caloric rate	0.001 to 999.9 cal/min
METS	1.000 to 31.62 Increment: 0.001 from 1 to 9.999; 0.01 from 10.00 to 31.62
Weight	Default: 150 lb or 68 kg Minimum: 30 lb or 13 kg Maximum: 400 lb or 181 kg Increment: 1 lb or 1 kg

HR ClubTrack Plus™ with Heart Rate Control (P/N 00425)

SPEED	(3-digit display)
Units	Miles per hour (mph) or kilometers per hour (km/h)
Range	0 to 12 mph, 0 to 19.3 km/h
Increment	0.1 mph, 0.16 km/h
Accuracy	Within ± 0.2 mph (0.32 km/h) of actual speed during unchanging operation, 1 mph (1.6 km/h) during speed decrease. Shows target, not actual, speed during speed changes.
GRADE	3-digit display
Units	percent
Range	0 to 15%
Increment	0.5%
Accuracy	Within ± 0.5% actual grade during unchanging operation
LCD DISPLAY	4.75 in. x 3.61 in. area, 320 x 240 pixels resolution. Displays user prompts, graphs, weight, time, exercise parameters and stages, and error messages
Time	Units: min:sec Range: 00:00 to 99:59 Increment: 00:01
Elapsed distance	Units: miles or kilometers Range: 0 to 99.9 miles or kilometers Increment: 0.001 from 0 to 9.999 mi or km; 0.01 from 10.00 to 99.99 mi or km
Pace	Units: minutes:seconds per mile or minutes:seconds per kilometer Range: 5:00 to 99:59 min:sec/mi (3:07 to 99:59 min:sec/km) Increment: 00:1 Zero speed; when walk belt speed is zero, the pace display indicates "-.-"
Calories	Total calories expended or caloric rate expenditure Units: calories or calories/min Range: 0.001 to 999.9 Increment: 0.001 from 0 to 9.999; 0.01 from 10 to 99.99; 0.1 from 100 to 999.9
Caloric rate	0.001 to 999.9 cal/min
METS	Range: 0.001 to 999.9 Increment: 0.001 from 1 to 9.999; 01 from 10.00 to 99.99 0.1 from 100 to 999.9
Heart rate	Units: beats per minute (BPM) Range: 50-200, Increment: 1 BPM
Enter Weight	Default: 150 lb or 68 kg Minimum: 30 lb or 13 kg Maximum: 400 lb or 181 kg Increment: 1 lb or 1 kg
Enter Target Heart Rate	Default: 140 beats per minute (BPM) Minimum: 80 BPM Maximum: 200 BPM Increment: 1 BPM
Enter Exercise Time	Default: 20 min Minimum: 7 min Maximum: —:— (no limit or owner-set maximum) Increment: 1 min
Serial interface	RS-232 interface, complies with CSAFE standards for external commuications.

Percent vs Angle Relationship for Treadmill Grade



$$\text{Grade} = \frac{\text{Rise}}{\text{Run}} \qquad \tan\theta = \frac{\text{Rise}}{\text{Run}}$$

$$\text{Grade} = \tan\theta \qquad \theta = \arctan(\text{Grade})$$

(Note: 15% Grade $\Longrightarrow$ Grade = 0.15)

Grade	Angle (°)	Grade	Angle (°)	Grade	Angle (°)	
0.0%	0.00	5.0%	2.86	10.0%	5.71	
0.5%	0.29	5.5%	3.15	10.5%	5.99	
1.0%	0.57	6.0%	3.43	11.0%	6.28	
1.5%	0.86	6.5%	3.72	11.5%	6.56	
2.0%	1.15	7.0%	4.00	12.0%	6.84	
2.5%	1.43	7.5%	4.29	12.5%	7.13	
3.0%	1.72	8.0%	4.57	13.0%	7.41	
3.5%	2.00	8.5%	4.86	13.5%	7.69	
4.0%	2.29	9.0%	5.14	14.0%	7.97	
4.5%	2.58	9.5%	5.43	14.5%	8.25	
5.0%	2.86	10.0%	5.71	15.0%	8.53	

C

Part Numbers

Final Assemblies

ITEM	PART NUMBER
ClubTrack Fitness Treadmill Assembly	00377
HR ClubTrack Fitness Treadmill with Heart Rate Monitoring Assembly	00402
ClubTrack Plus Treadmill Assembly	00382
HR ClubTrack Plus Fitness Treadmill with Heart Rate Control Assembly	00425
MedTrack CR 60 Treadmill Assembly	00380
MedTrack SR 60 Treadmill Assembly	00390
The following dash numbers apply to all treadmill part numbers above:	
English U.S.A. 99 - 132V, 60 Hz, 20A	001
English U.S.A. 198 - 250V, 60 Hz, 10A	009
English U.K. 198 -250V, 50/60 Hz, 10A	002
German, 198 - 250V, 50/60 Hz, 10A	003
French, 198 - 250V, 50/60 Hz, 10A	004
Italian, 198 - 250V, 50/60 Hz, 10A	005
Spanish, 198 - 250V, 50/60 Hz, 10A	006
Japanese, 90 - 132V, 50/60 Hz, 20A	007
Japanese, 180 - 250V, 50/60 Hz, 10A	008

Operator and Service Manuals

Part No.	Description
00377-84x	ClubTrack /HR ClubTrack User's Guide
00382-84x	ClubTrack Plus User's Guide
00425-84x	HR ClubTrack Plus User's Guide
00380-84x	MedTrack Rehabilitation Treadmills Operator Manual (Covers both CR60 and SR60)
00377-83x	Service Manual (English language only)

(x signifies the number of the latest revision.)

Spares

ELECTRICAL	
Power Cord	
North America	30610-004
Japan 100V	30610-004
U.K	30736-012
Germany	30736-015
France	30736-015
Spain	30736-015
Italy	30736-013
Japan 200V	30736-020
Strain Relief	01227-006
Configuration Plate	
North America	32776-001
International	32776-002
PCBA Assy, Drive	32975-002
DRIVE	
Drive Motor Assy	32783-002
Drive Motor Isolation Kit	33503-001
Flywheel Assembly	32446-001 (-003 CR60)
Drive Belt	32387-001 (-002 CR60)
Tensioner Assembly	32784-001
Transformer Assembly	32706-001
GRADE	
Grade Motor Assy	33316-002
Grade POT Assy	33171-002
Grade Wheel Kit	33502-002
Grade Chain Kit	30448-001
Sprocket, chain, grade motor	19081-004
DECK	
Deck	30204-001
Front Roller	33507-002 (-001 CR60)
Rear Roller Assy	33508-002
Walkbelt	33509-002
Triple Flex Maintenance Kit	33511-001
Siderail Cover, right	19488-002
Siderail Cover, left	19489-002
End Cap, Front Left	19306-001
End Cap, Front Right	19306-002
End Cap, Rear Left	19057-002
End Cap, Rear Right	19058-002
Left Handrail Kit	30005-004
Right Handrail Kit	30005-005
Left and Right Handrail Kit	30005-006
Weldment Side Rail, right	32707-003 (-004 CR60)
Weldment Side Rail, left	32709-003 (-004 CR60)
HARDWARE	
Spare Hardware	33372-001
Magnet	19296-001

Controllers

ClubTrack® P/N 00377	
PCBA	33518-001
Keypanel	
English	33504-001
German	33504-003
French	33504-005
Italian	33504-007
Spanish	33504-009
Japanese	33504-011
Controller Assy (PCBA & keypanel)	
English	034506-001
German	034506-003
French	034506-005
Italian	034506-007
Spanish	034506-009
Japanese	034506-011
HR ClubTrack™ with Heart Rate Monitoring (HRM) P/N 00402	
PCBA	34296-001
Keypanel	
English	34298-001
German	34298-002
French	34298-003
Italian	34298-004
Spanish	34298-005
Japanese	34298-006
Controller Assy (PCBA, keypanel, & receiver)	
English	34297-001
German	34297-002
French	34297-003
Italian	34297-004
Spanish	34297-005
Japanese	34297-006
Receiver Assy	34295-001
HRM Upgrade Kit (Convert ClubTrack to HR ClubTrack with HRM)	
English	34299-001
German	34299-002
French	34299-003
Italian	34299-004
Spanish	34299-005
Japanese	34299-006
ClubTrack Plus® Upgrade Kit (Convert ClubTrack to ClubTrack Plus)	
English, U.S.A.	34328-001
English, International	34328-002
German	34328-003
French	34328-004
Italian	34328-005
Spanish	34328-006
Japanese	34328-007

MedTrack® CR60 P/N 00380 & SR60 P/N 00390	
PCBA	33518-001
Keypanel	
English	33504-002
German	33504-004
French	33504-006
Italian	33504-008
Spanish	3 3504-010
Japanese	33504-012
Controller Assy (PCBA & keypanel)	
English	34506-002
German	34506-004
French	34506-006
Italian	34506-008
Spanish	34506-010
Japanese	34506-012
ClubTrack Plus® P/N 00382	
PCBA	33519-002
Keypanel	
English	33505-001
German	33505-002
French	33505-003
Italian	33505-004
Spanish	33505-005
Japanese	33505-006
Controller Assy (PCBA & keypanel)	
English	034505-001
German	034505-002
French	034505-003
Italian	034505-004
Spanish	034505-005
Japanese	034505-006
HR ClubTrack Plus™ with Heart Rate Control P/N 00425	
PCBA	35452
Keypanel Assy	
English	35260-001
German	35260-002
French	35260-003*
Italian	35260-004*
Spanish	35260-005
Japanese	35260-006*
Controller Assy (PCBA, keypanel, & receiver)	
English	35258-001
German	35258-002
French	35258-003*
Italian	35258-004*
Spanish	35258-005
Japanese	35258-006*
Receiver Assy	34295-001
Interface Cable RS-232	34721-001
Liquid Crystal Display (LCD)	35259-001
Fluorescent Tube (Backlight Assy)	35428-001

HR ClubTrack Plus™ Upgrade Kit (Convert any Hyperdrive™ treadmill to HR ClubTrack Plus)	
English, U.S.A.	35371-001
German	35371-002
French	35371-003*
Italian	35371-004*
Spanish	35371-005
Japanese	35371-006*
* These versions may be available in the future.	

Accessories for Heart Rate Monitoring

Transmitter Belt	34198-003
Pulse Simulator	34198-008
Polar Favor Wrist Monitor	34198-009

➤ To avoid potential safety and electrical problems, use parts and accessories that meet Quinton specifications.

D

Field Functional Tests

WARNING

The VSD PCBA generates high voltage which is present whenever DS4 and DS5 are illuminated: Never touch the PCBA when DS4 and DS5 are on. Bleeder resistors on the VSD PCBA bleed off the high voltage in approximately two minutes. Do not touch the VSD PCBA until DS4 and DS5 have gone out.

These procedures apply to all Quinton Hyperdrive treadmills (ClubTrack, ClubTrack Plus, HR ClubTrack, HR ClubTrack Plus, MedTrack SR, and MedTrack CR. You may perform the complete test, or only the tests required after repair or replacement of parts as specified in Chapter 4, *Repair/ Replacement and Calibration.* Please read the entire chapter before starting. The appropriate test *must* be performed as verification whenever any of the procedures in Chapter 4 are used.

Complete Field Functional Test

➤ The following steps must be performed with the treadmill completely assembled, except as noted.

With the power cord connected to the correct outlet, turn on the circuit breaker.

A. Test the Controller Displays

ClubTrack®, HR ClubTrack™, MedTrack® SR60, and MedTrack® CR60

Observe the controller displays during initialization. For the ClubTrack, ClubTrack with Heart Rate Monitor, MedTrack SR60, and MedTrack CR60, the normal sequence is:

- Seven segment displays show all 8s (888 8888 888).
- After 3 seconds, all displays go blank.
- Multi display briefly shows configuration code (0.0 CP.-x 0.0).
- Normal display is shown (00 150 00).

If the normal sequence does not occur, refer to the following table for possible causes.

ClubTrack, HR ClubTrack, MedTrack SR60, and MedTrack CR60

Problem	Possible Cause	Solution
Seven segment displays lock up with all 8s and do not go blank.	ESD (static)	Make sure control panel is properly grounded. Check the following: • All star washers are installed • Green wire goes to VSD PCB • Continuity to ground on power cord plug • Less than two ohms neutral to ground at the power outlet
	Hall Effect Sensor (SW 1) and screw on key panel may have excessive clearance.	
	Hall Effect Sensor (SW 1) and screw on key panel may be misaligned.	
	Microprocessor socket may be damaged.	Replace controller PCBA
	Microprocessor socket may be from non-approved vendor (McKenzie).	
Seven segment displays flash all 8s and then go blank and stay blank.	Limited-access switch is activated.	Deactivate limited-access switch (see user manual)

ClubTrack Plus®

For the ClubTrack Plus, the normal sequence is:

- Seven segment displays show all 8s (888 8888 888).
- Tri-color display flashes all green, all red, all yellow.
- Seven segment displays blink, then go blank.
- Multi display briefly shows configuration code (0.0 CP.-x 0.0).
- Normal display shown on seven segment display (00 150 00).
- Tri-color display scrolls INPUT WT. +/- message.

HR ClubTrack Plus™

For the HR ClubTrack Plus, the normal sequence is:

- Seven segment displays show all 8s.
- LCD screen is all white.
- Introduction screen appears on LCD.
- Zero speed and the current grade appear on the segmented displays.

B. Test the Multi Display

Observe the center Multi display on the controller. If an error code is displayed, refer to *Error Codes* in Chapter 3, *Troubleshooting*.

C. Test the Controller Operation

Test the Controller Keys

1. To enter *Service* mode, press **Stop Belt+Faster+Slower**. **P000** appears in the *Select* display, indicating that no key is pressed.

   ➤ On the **ClubTrack Plus,** the word *Service* scrolls across the tri-color display.

   On the **HR ClubTrack Plus,** the screen lists the tests described below. To perform a test, press the softkey next to the test name, rather than pressing the indicated key combinations.

2. Press and hold each key in succession to display the appropriate code in the *Select* display (the HR ClubTrack Plus displays text instead of code). **P000** should appear when you release each key.

Key	Code
No key pressed	P000
Shorted key(s)	P555
Clear	P001
Up	P002
Down	P003
Stop Belt	P004
Input+	P005
Input—	P006
Enter*	P007
Select	P007
Next Stage*	P008
Start Belt	P009
Units	P010
Start Course*	P011
Resume Course*	P012
Cool Down	P013
Faster	P014
Slower	P015

**ClubTrack Plus only*

Test the Keypanel Displays

Press **Stop Belt+Up+Down**.

- The display cycles though one digit at a time in each display, starting from left to right across the panel. Each digit displays the number **8** and the associated decimal point for one second, then turns off as the next one lights up.

- When this is completed, the LEDs light up individually, starting from the top. The *Select* LEDs light up first, followed by the *Units* LEDs.
- After the LEDs are tested, all digits in all three displays simultaneously count up from 0 to 9 (no decimal points are illuminated during this count).

Test the Tri-color Display (ClubTrack Plus®only)

1. Press **Next Stage+Up+Down** until the test begins.
    - Vertical columns on the tri-color display light red, green, and then yellow for one second each. The columns move from left to right until all display LEDs have been tested.
    - Horizontal columns light red, green, then yellow for one second each. The columns move from top to bottom until all LEDs have been tested.
    - All LEDs go dark when the test is finished.
2. Press **Power** twice to exit *Service* mode.

Test the Heart Rate Monitoring (HR treadmills only)

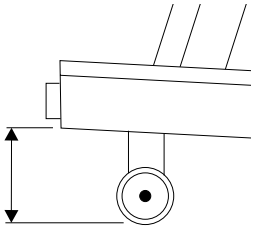
Use a pulse simulator (P/N 34198-008) and a Polar watch receiver (P/N 34198-009) to test the accuracy of the controller's heart rate function.

1. Turn on the pulse simulator. The LED on the front of the simulator will blink in synch with the signal.
2. Place the Polar watch receiver next to the pulse simulator to begin receiving. The watch will display the digital heart rate.
3. Check the rate displayed on the watch against the rate displayed on the controller. If the controller differs by five beats, replace the receiver (P/N 34295) and re-test. If the problem remains, replace the controller assembly (HR ClubTrack, p/n 34297, HR ClubTrack Plus p/n 35258).

D. Test the Grade Operation

1. Remove the hood (refer to *Removing Treadmill Hood* in Chapter 4, *Repair/Replacement and Calibration).*
2. Ensure the controller displays 0.0% grade.
3. Measure the distance from the floor to the lower edge of the sideòcal cover at the rear support and at the front grade wheel. Both measurements should be the same ± ⅜ in. If they are not, refer to *Calibration Procedures* in Chapter 4, *Repair/ Replacement and Calibration.*
4. Increase the grade to 15.0%
5. Measure the distance from the floor to the bottom front edge of the head. Refer to the following table for the correct measurement:

Treadmill	Measurement
ClubTrack	14 3/8 in ± 3/8 in
HR ClubTrack	
ClubTrack Plus	
HR ClubTrack Plus	
MedTrack SR60	
MedTrack CR60	14 7/8 in ± 3/8 in



6. Ensure that the grade will traverse from minimum to maximum and back.
7. Replace the hood (refer to *Removing Treadmill Hood* in Chapter 4, *Repair/Replacement and Calibration).*

E. Test Speed Operation

1. Place a chalk mark or piece of tape on the walk belt across the direction of travel.
2. Place another mark or piece of tape on the top of the siderail cover.
3. Start the walk belt and increase its speed to 4.0 mph.
4. Count how many times the belt rotates in two minutes. This should be 62 ± 3 revolutions for all treadmill models.

ClubTrack®, ClubTrack Plus®, HR Treadmills, MedTrack® SR60

5. Increase the walk belt speed to 10.0 mph.
6. Count the number of belt revolutions in two minutes. This should be 155 ± 3 revolutions.

MedTrack® CR60

5. Increase the walk belt speed to 7.2 mph.
6. Count the number of belt revolutions in two minutes. This should be 112 ± 3 revolutions.

If any of the measurements are not accurate, refer to *Replacing the Tensioner* and/or *Adjusting the Walk Belt* in Chapter 4, *Repair/ Replacement and Calibration.*

7. Ensure that the speed will traverse from minimum to maximum and back.

F. Test the Deck Friction

1. Increase the treadmill grade to 15% (maximum).
2. Do not start the belt. Stand on the treadmill walk belt and push away from the handrail. The belt should begin rotating with little forward pressure and continue to rotate for several

steps. If additional pressure is required to keep the belt moving, replace the belt and deck.

G. Test the Walk Belt Operation

1. With the walk belt speed at maximum, observe the tracking. If it needs adjustment, refer to *Walk Belt Tracking* in Chapter 4, *Repair/Replacement and Calibration.*
2. With the walk belt speed at 3.0 mph, walk on the treadmill.
3. Grasp the handrail and resist the motion of the walk belt. If any slippage is detected, refer to *Replacing the Tensioner* and/or *Adjusting the Walk Belt* in Chapter 4. *Repair/Replacement and Calibration.*
4. Stop the walk belt.

H. Shut Down the Treadmill

Turn the circuit breaker off, disconnect the power cord from the outlet, and place the treadmill back in service.

Field Test No. 1

➤ The following steps must be performed with the treadmill completely assembled, except as noted.

With the power cord connected to the correct outlet, turn on the circuit breaker.

A. Test the Controller Displays

ClubTrack®, HR ClubTrack™, MedTrack® SR60, and MedTrack® CR60

Observe the controller displays during initialization. For the ClubTrack, ClubTrack with Heart Rate Monitor, MedTrack SR60, and MedTrack CR60, the normal sequence is:

- Seven segment displays show all 8s (888 8888 888).
- After 3 seconds, all displays go blank.
- Multi display briefly shows configuration code (0.0 CP.-x 0.0).
- Normal display is shown (00 150 00).

If the normal sequence does not occur, refer to the following table for possible causes:

ClubTrack, HR ClubTrack, MedTrack SR60, and MedTrack CR60

Problem	Possible Cause	Solution
Seven segment displays lock up with all 8s and do not go blank.	ESD (static)	Make sure control panel is properly grounded. Check the following: • All star washers are installed • Green wire goes to VSD PCB • Continuity to ground on power cord plug • Less than two ohms neutral to ground at the power outlet
	Hall Effect Sensor (SW 1) and screw on key panel may have excessive clearance.	
	Hall Effect Sensor (SW 1) and screw on key panel may be misaligned.	
	Microprocessor socket may be damaged	Replace controller PCBA.
	Microprocessor socket may be from non-approved vendor (McKenzie).	
Seven segment displays flash all 8s and then go blank and stay blank.	Limited-access switch is activated.	Deactivate limited- access switch (see user manual)

ClubTrack Plus®

For the ClubTrack Plus, the normal sequence is:

- Seven segment displays show all 8s (888 8888 888).
- Tri-color display flashes all green, all red, all yellow.
- Seven segment displays blink, then go blank.
- Multi display briefly shows configuration code (0.0 CP.-x 0.0).
- Normal display is shown on seven segment display (00 150 00).
- Tri-color display scrolls INPUT WT. +/- message.

HR ClubTrack Plus™

For the HR ClubTrack Plus, the normal sequence is:

- Seven segment displays show all 8s.
- LCD screen is all white.
- Introduction screen appears on LCD.
- Zero speed and the current grade appear on the segmented displays.

B. Test the Multi Display

Observe the center Multi display on the controller. If an error code is displayed, refer to *Error Codes* in Chapter 3, *Troubleshooting*.

C. Shut Down the Treadmill

Turn the circuit breaker off, disconnect the power cord from the outlet, and place the treadmill back in service.

Field Test No. 2

➤ The following steps must be performed with the treadmill completely assembled, except as noted.

With the power cord connected to the correct outlet, turn on the circuit breaker.

A. Test the Controller Displays

ClubTrack®, HR ClubTrack™, MedTrack® SR60, and MedTrack® CR60

Observe the controller displays during initialization. For the ClubTrack, ClubTrack with Heart Rate Monitor, MedTrack SR60, and MedTrack CR60, the normal sequence is:

- Seven segment displays show all 8s (888 8888 888).
- After 3 seconds, all displays go blank.
- Multi display briefly shows configuration code (0.0 CP.-x 0.0).
- Normal display is shown (00 150 00).

If the normal sequence does not occur, refer to the following table for possible causes.

ClubTrack, HR ClubTrack, MedTrack SR60, and MedTrack CR60

Problem	Possible Cause	Solution
Seven segment displays lock up with all 8s and do not go blank.	ESD (static)	Make sure control panel is properly grounded. Check the following: • All star washers are installed • Green wire goes to VSD PCB • Continuity to ground on power cord plug • Less than two ohms neutral to ground at the power outlet
	Hall Effect Sensor (SW 1) and screw on key panel may have excessive clearance.	
	Hall Effect Sensor (SW 1) and screw on key panel may be misaligned.	
	Microprocessor socket may be damaged.	Replace controller PCBA
	Microprocessor socket may be from non-approved vendor (McKenzie).	
Seven segment displays flash all 8s and then go blank and stay blank.	Limited-access switch is activated.	Deactivate limited-access switch (see user manual)

ClubTrack Plus®

For the ClubTrack Plus, the normal sequence is:

- Seven segment displays show all 8s (888 8888 888).
- Tri-color display flashes all green, all red, all yellow.
- Seven segment displays blink, then go blank.
- Multi display briefly shows configuration code (00 CP.-x 0.0).
- Normal display is shown on seven segment display (00 150 00).
- Tri-color display scrolls INPUT WT. +/- message.

HR ClubTrack Plus™

For the HR ClubTrack Plus, the normal sequence is:

- Seven segment displays show all 8s.
- LCD screen is all white.
- Introduction screen appears on LCD.
- Zero speed and the current grade appear on the segmented displays.

B. Test the Multi Display

Observe the center Multi display on the controller. If an error code is displayed, refer to *Error Codes* in Chapter 3, *Troubleshooting*.

C. Test the Grade

Ensure that the grade will traverse from minimum to maximum and back.

D. Test the Speed

Ensure that the speed traverses from minimum to maximum and back.

E. Shut Down the Treadmill

Turn the circuit breaker off, disconnect the power cord from the outlet, and place the treadmill back in service.

Field Test No. 3

➤ The following steps must be performed with the treadmill completely assembled, except as noted.

With the power cord connected to the correct outlet, turn on the circuit breaker.

A. Test Speed Operation

1. Place a chalk mark or piece of tape on the walk belt across the direction of travel.

2. Place another mark or piece of tape on the top of the siderail cover.
3. Start the walk belt and increase its speed to 4.0 mph.
4. Count how many times the belt rotates in two minutes. This should be 62 ± 3 revolutions for all treadmill models.

ClubTrack®, ClubTrack Plus®, HR Treadmills, MedTrack® SR60

5. Increase the walk belt speed to 10.0 mph.
6. Count the number of belt revolutions in two minutes. This should be 155 ± 3 revolutions.

MedTrack® CR60

5. Increase the walk belt speed to 7.2 mph.
6. Count the number of belt revolutions in two minutes. This should be 112 ± 3 revolutions.

If any of the measurements are not accurate, refer to *Replacing the Tensioner* and/or *Adjusting the Walk Belt* in Chapter 4, *Repair/ Replacement and Calibration.*

7. Ensure that the speed will traverse from minimum to maximum and back.

B. Test the Deck Friction

1. Increase the treadmill grade to 15% (maximum).
2. Do not start the belt. Stand on the treadmill walk belt and push away from the handrail. The belt should begin rotating with little forward pressure and continue to rotate for several steps. If additional pressure is required to keep the belt moving, replace the belt and deck.

C. Test the Walk Belt Operation

1. With the walk belt speed at minimum, observe the tracking. If it needs adjustment, refer to *Walk Belt Tracking* in Chapter 4, *Repair/Replacement and Calibration.*
2. With the walk belt speed at minimum, walk on the treadmill.
3. Grasp the handrail and resist the motion of the walk belt. If any slippage is detected, refer to *Replacing the Tensioner* and/or *Adjusting the Walk Belt* in Chapter 4, *Repair/Replacement and Calibration.*
4. Stop the walk belt

D. Shut Down the Treadmill

Turn the circuit breaker off, disconnect the power cord from the outlet, and place the treadmill back in service.

Field Test No. 4

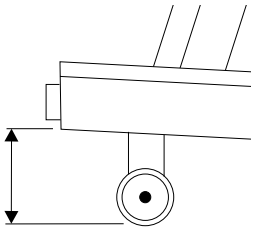
➤ The following steps must be performed with the treadmill completely assembled, except as noted.

With the power cord connected to the correct outlet, turn on the circuit breaker.

A. Test the Grade Operation

1. Remove the hood (refer to *Removing Treadmill Hood* in Chapter 4, *Repair/Replacement and Calibration).*
2. Ensure the controller displays 0.0% grade.
3. Measure the distance from the floor to the lower edge of the siderail cover at the rear support and at the front grade wheel. Both measurements should be the same ± ⅜ in. If they are not, refer to *Calibration Procedures* in Chapter 4, *Repair/ Replacement and Calibration.*
4. Increase the grade to 15.0%
5. Measure the distance from the floor to the bottom front edge of the head. Refer to the following table for the correct measurement.

Treadmill Model	Measurement
ClubTrack	14 ⅜in. ± ⅜in.
HR ClubTrack	
ClubTrack Plus	
HR ClubTrack Plus	
MedTrack SR60	
MedTrack CR60	14 ⅞in. ± ⅜in.



6. Ensure that the grade will traverse from minimum to maximum and back.
7. Replace the hood (refer to *Removing Treadmill Hood* in Chapter 4, *Repair/Replacement and Calibration).*

B. Shut Down the Treadmill

Turn the circuit breaker off, disconnect the power cord from the outlet, and place the treadmill back in service.

Field Test No. 5

➤ The following steps must be performed with the treadmill completely assembled, except as noted.

With the power cord connected to the correct outlet, turn on the circuit breaker.

A. Test the Controller Displays

ClubTrack®, HR ClubTrack™, MedTrack® SR60, and MedTrack® CR60

Observe the controller displays during initialization. For the ClubTrack, ClubTrack with Heart Rate Monitor, MedTrack SR60, and MedTrack CR60, the normal sequence is:

- Seven segment displays show all 8s (888 8888 888).
- After 3 seconds, all displays go blank.
- Multi display briefly shows configuration code (0.0 CP.-x 0.0).
- Normal display is shown (00 150 00).

If the normal sequence does not occur, refer to the following table for possible causes.

ClubTrack, HR ClubTrack, MedTrack SR60, and MedTrack CR60

Problem	Possible Cause	Solution
Seven segment displays lock up with all 8s and do not go blank.	ED (static)	Make sure control panel is properly grounded. Check the following: • All star washers are installed • Green wire goes to VSD PCB • Continuity to ground on power cord plug • Less than two ohms neutral to ground at the power outlet
	Hall Effect Sensor (SW 1) and screw on key panel may have excessive clearance.	
	Hall Effect Sensor (SW 1) and screw on key panel may be misaligned.	
	Microprocessor socket may be damaged .	Replace controller PCBA.
	Microprocessor socket may be from non-approved vendor (McKenzie).	
Seven segment displays flash all 8s and then go blank and stay blank.	Limited-access switch is activated.	Deactivate limited-access switch (see user manual)

ClubTrack Plus®

For the ClubTrack Plus, the normal sequence is:

- Seven segment displays show all 8s (888 8888 888).
- Tri-color display flashes all green, all red, all yellow.
- Seven segment displays blink, then go blank.
- Multi display briefly shows configuration code (0.0 CP.-x 0.0).
- Normal display is shown on seven segment display (00 150 00).
- Tri-color display scrolls INPUT WT. +/- message.

HR ClubTrack Plus™

For the HR ClubTrack Plus, the normal sequence is:

- Seven segment displays show all 8s.
- LCD screen is all white.
- Introduction screen appears on LCD.
- Zero speed and the current grade appear on the segmented displays.

B. Test the Multi Display

Observe the center Multi display on the controller. If an error code is displayed, refer to *Error Codes* in Chapter 3, *Troubleshooting*.

C. Test the Controller Operation

To test for proper controller operation:

Test the Controller Keys

1. To enter *Service* mode, press **Stop Belt+Faster+Slower**. **P000** appears in the *Select* display, indicating that no key is pressed.

   ➤ On the **ClubTrack Plus**, the word *Service* scrolls across the tri-color display.

   On the **HR ClubTrack Plus,** the screen lists the tests described below. To perform a test, press the softkey next to the test name, rather than pressing the indicated key combinations.

2. Press and hold each key in succession to display the appropriate code in the *Select* display (the HR ClubTrack Plus displays text instead of code). **P000** should appear when you release each key.

Key	Code
No key pressed	P000
Shorted key(s)	P555
Clear	P001
Up	P002
Down	P003

(continued)

Stop Belt	P004
Input+	P005
Input—	P006
Enter*	P007
Select	P007
Next Stage*	P008
Start Belt	P009
Units	P010
Start Course*	P011
Resume Course*	P012
Cool Down	P013
Faster	P014
Slower	P015

**ClubTrack Plus only*

Test the Key Panel Displays

Press **Stop Belt+Up+Down**.

- The display cycles though one digit at a time in each display, starting from left to right across the panel. Each digit displays the number **8** and the associated decimal point for one second, then turns off as the next one lights up.
- When this is completed, the LEDs light up individually, starting from the top. The *Select* LEDs light first, followed by the *Units* LEDs.
- After the LEDs are tested, all digits in all three displays simultaneously count up from 0 to 9 (no decimal points are illuminated during this count).
- Perform the LCD display test (pg 3-7).

Test the Tri-color Display (ClubTrack Plus® only)

1. Press **Next Stage+Up+Down** until the test begins.
    - Vertical columns on the tri-color display light red, green, and then yellow for one second each. The columns move from left to right until all display LEDs have been tested.
    - Horizontal columns light red, green, and then yellow for one second each. The columns move from top to bottom until all LEDs have been tested.
    - All LEDs go dark when the test is finished.
2. Press **Power** twice to exit *Service* mode.

Test the Heart Rate Monitoring (HR treadmills only)

Use a pulse simulator (P/N 34198-008) and a Polar watch receiver (P/N 34198-009) to test the accuracy of the controller's heart rate function.

1. Turn on the pulse simulator. The LED on the front of the simulator will blink in synch with the signal.

2. Place the Polar watch receiver next to the pulse simulator to begin receiving. The watch will display the digital heart rate.

3. Check the rate displayed on the watch against the rate displayed on the controller. If the controller differs by five beats, replace the receiver (P/N 34295) and re-test. If the problem remains, replace the controller assembly: HR ClubTrack p/n 34297, HR ClubTrack Plus, p/n 35258.

D. Shut Down the Treadmill

Turn the circuit breaker off, disconnect the power cord from the outlet, and place the treadmill back in service.

E

Assembly Drawings

P/N	Assembly
32706	Transformer
32975	Cage Assembly, Drive PCBA
32776	Configuration Plate
32976	ClubTrack/MedTrack CR60/SR60 Control Panel
34238	HR ClubTrack Control Panel
33046	ClubTrack Plus Control Panel, Motivational
34664	HR ClubTrack Plus Control Panel
33170	Harness Assembly, Limit Switch
32783	Motor, Drive, AC Variable
32359	System Wiring
33171	Assembly, Grade Pot

INITIAL APPLICATION			REVISIONS			
DASH NO.	NEXT ASSY.	END ITEM No.	LTR	DESCRIPTION	APPROVED	DATE
-001	032359	000377 000378 000380 000382 000383 000390	E	DCN: 40223 CP: 40222 DIM WAS 31.00±.05 (SH 6) ACTION CODE: F1 MODIFIER: DATE OF RELEASE	T. Duong W. Thompson J.M. Dunn D. VanDeVenter	10/30/96 11/4/96 11/8/96 11/5/96

ONLY THE ITEM DESCRIBED ON THIS DRAWING WHEN PROCURED FROM THE VENDOR(S) LISTED HEREON IS APPROVED BY THE QUINTON DESIGN ENGINEERING DEPARTMENT IN THE APPLICATIONS SPECIFIED BY THIS DOCUMENT NUMBER. SUBSTITUTE ITEMS SHALL NOT BE USED.

UNIT OF MEASURE: EACH
UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS ARE IN INCHES.

1.0 DESCRIPTION: VARIABLE AC TREADMILL TRANSFORMER

1.1 The treadmill transformer provides electrical isolation between the primary and secondary voltages. It also provides stepped-down voltages for use with control electronics. Electrical isolation between windings (including secondary "x" to secondary "y") is paramount since this transformer will be used in medical applications which set strict limits for a system's leakage current.

PRODUCTION

-001	TRANSFORMER, VARIABLE AC TREADMILL	2	33993
		1	BE27606001

DASH No.	DESCRIPTION	MFG CODE	MFG PART NUMBER

PARTS LIST

SOURCE CONTROL DRAWING

CLASS CODE: XFMA	VALUE CODE: 50/60/

DRAWN: R. P-CANNON	2/2/95
ENGR: L. HASS	2/13/95
MFG: S. CURRAN	2/13/95
QUAL: K. Bailey	5/17/95
COMPL: B. Nafea	5/18/95
MKTG: ———	
TECH SVCE: ———	

Quinton® instrument co.
3303 MONTE VILLA PARKWAY
BOTHELL, WA. 98021-8906
206/402-2000

TITLE: TRANSFORMER, VARIABLE AC TREADMILL

SIZE	DWG. NO.	REV
A	032706	E

SCALE NONE | SOURCE: ACAD | SHEET 1 OF 6

APPROVED SOURCE(S) OF SUPPLY
(2) CTM MAGNETICS TEMPE, AZ
(1) BASLER XFMRS HIGHLAND, IL

DISTRIBUTION CODE: 2

031164-002B

2.0 ELECTRICAL SPECIFICATIONS:

The transformer consists of a dual primary to allow either 110VAC or 220VAC operation and three secondary windings, as shown in Figure 1.

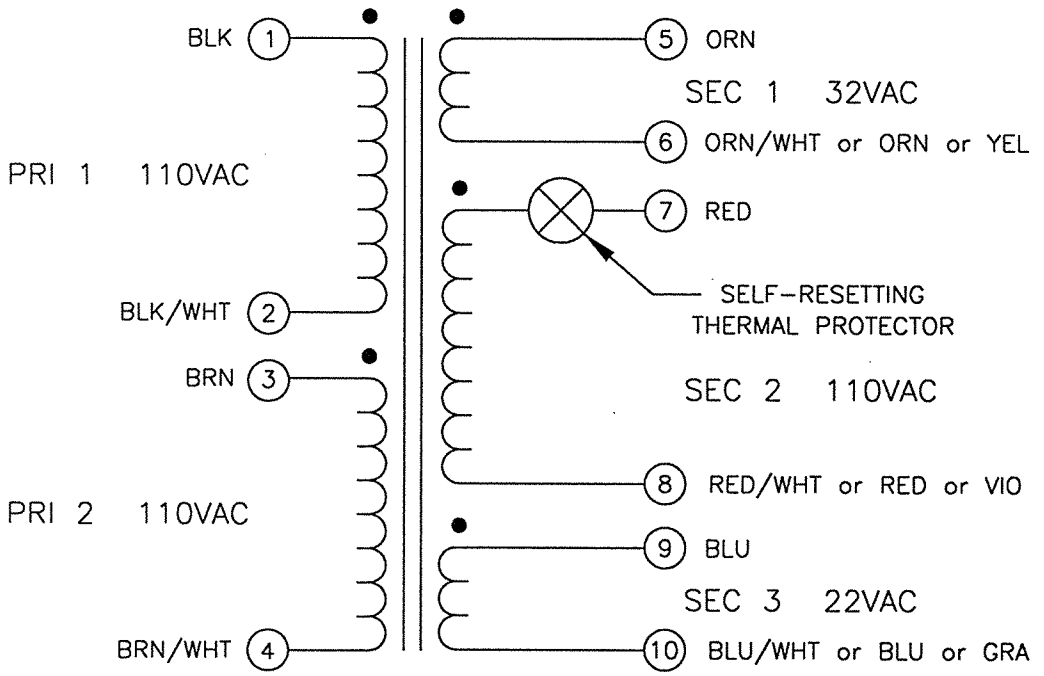


FIGURE 1

2.1 PRIMARY RATING:

(PRI 1 and PRI 2) 100/200 to 120/240VAC ±10%, 50/60Hz, 330VA.

2.2 SECONDARY RATINGS:

(PRI 1 II PRI 2, 100–120VAC Configuration) Vi = 132VAC, 60Hz.

2.2.1 SEC 1: ≤ 39.0VAC, no-load
2.2.2 SEC 2: ≤ 145VAC, no-load
2.2.3 SEC 3: ≤ 28.0VAC, no-load

(PRI 1 II PRI 2, 100–120VAC Configuration) Vi = 90VAC, 50Hz.

2.3.1 SEC 1: ≥ 24.6VAC @ 15.0VA
2.3.2 SEC 2: ≥ 75VAC @ 200VA
2.3.3 SEC 3: ≥ 17.0VAC @ 50VA

3.0 REGULATORY REQUIREMENTS:

Construction to comply with UL544 and appropriate IEC 601-1 standards (Non-patient connected). Construction details must be approved by Quinton Engineering and must not be changed without prior approval by Quinton Engineering.

3.1 Creepage distances and air clearances:
Required creepage distances are shown in millimeters in Figure 2. Refer to Table 1 for conversion of millimeters to inches and associated air clearance requirements.

NOTE: The SEC 2 winding is completely isolated (i.e. floating) in this application, with no connection to accessible parts.

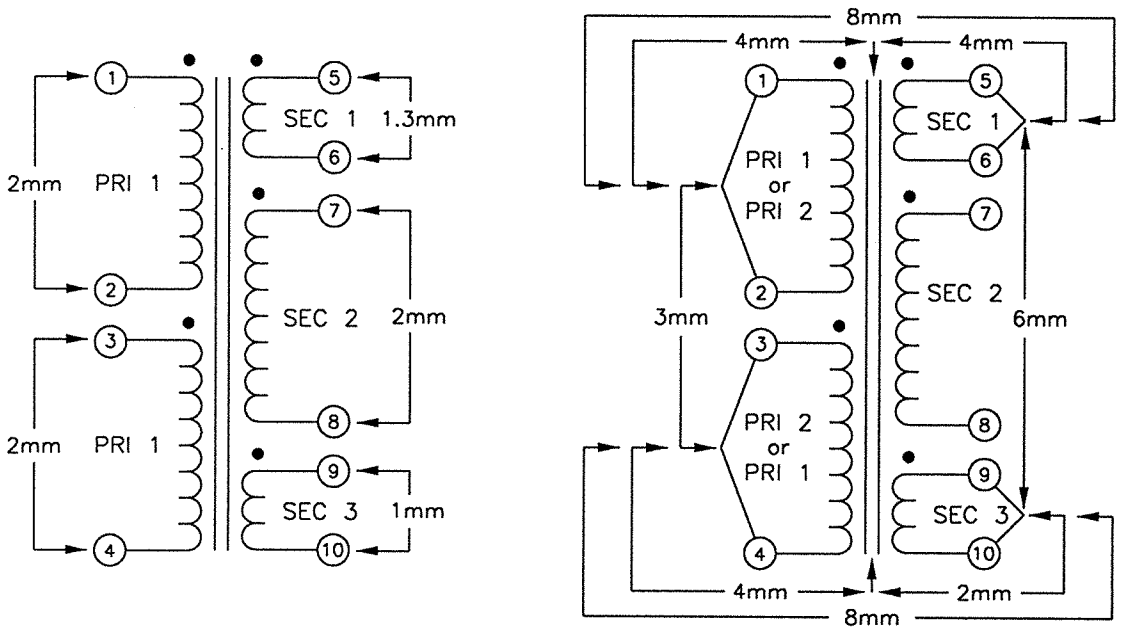


FIGURE 2

CREEPAGE DISTANCE MILLIMETERS	CREEPAGE DISTANCE INCHES	REQUIRED AIR CLEARANCE INCHES
1	.040	.020
1.3	.052	.028
2	.079	.040
3	.119	.063
4	.158	.099
6	.237	.126
8	.315	.197

TABLE 1

SIZE		DWG. NO.	REV
A	Quinton® instrument co.	032706	E
SCALE: NONE	SOURCE: ACAD	SHEET 3 OF 6	

031164-004A

3.2 WINDINGS:

Class B insulation; rated for 130° C: without crossover of primary and secondary and crossover of secondaries.
"SEC 2" must be thermally protected by a self-resetting switch (Refer to Figure 1).

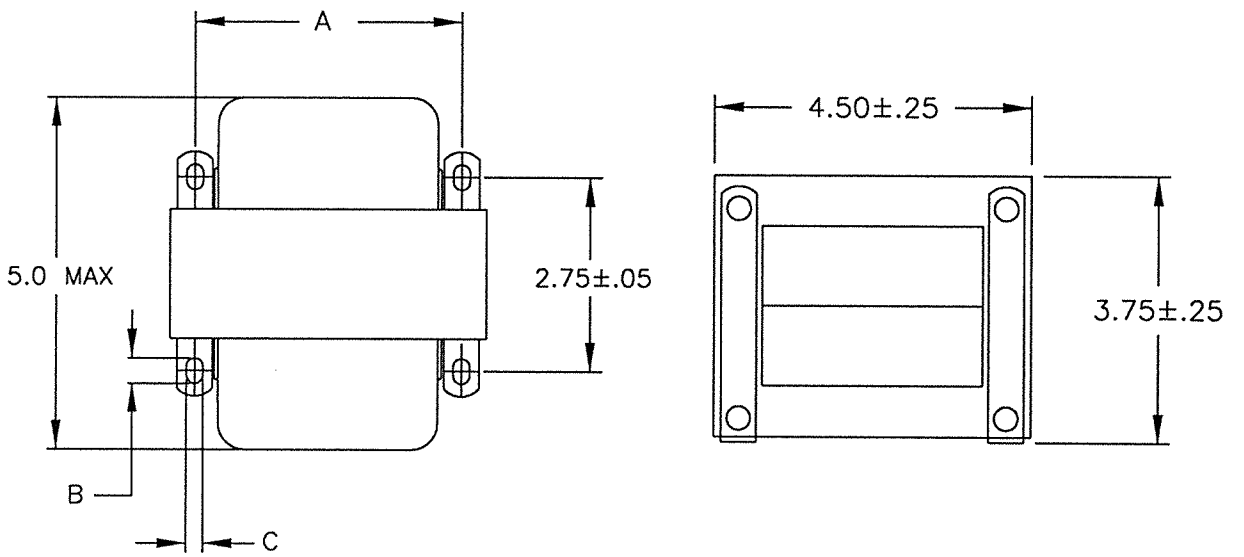
3.3 BOBBIN:
Rated for 130°C; flame retardant to UL94HB (e.g. glass-filled nylon). Must provide separation between primary and secondary windings. Separation between individual secondary windings, while preferred, is not required if all other design criteria can be met.

3.4 HI-POT:
4KVAC, primary to secondary: 3KVAC, secondary to secondary, and 2.5KVAC, winding to core.

3.5 MOUNTING HARDWARE:
Mounting hardware must be electrically connected to the transformer core so the core is electrically connected to the mounting surface when installed using #10 star washers (external star).

4.0 DIMENSIONAL DATA:

4 DELETED



BOTTOM VIEW FRONT VIEW

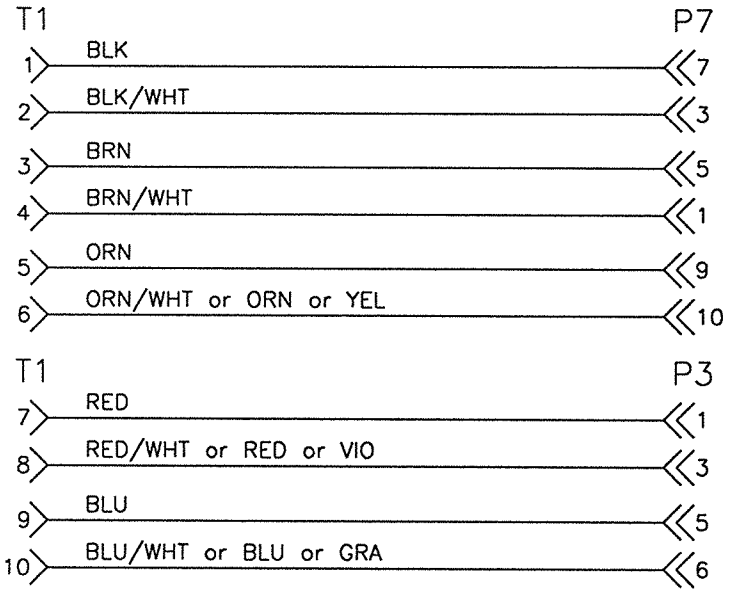
FIGURE 3

DIMENSION	SOURCE 1	SOURCE 2
A	3.750 ±.015	3.750 ±.050
B	.36 ±.03	.375 ± .020
C	.234 $^{+.026}_{-.000}$	.203 $^{+.020}_{-.010}$

SIZE		DWG. NO.	REV
A	Quinton® instrument co.	032706	E
SCALE: NONE	SOURCE: ACAD	SHEET 4 OF 6	

031164-004A

5.0 **Termination of the transformer windings is to be completed as** shown in the schematic (Figure 4), parts list (Table 2), and the assembly (Figure 5).



WIRE HARNESS SCHEMATIC

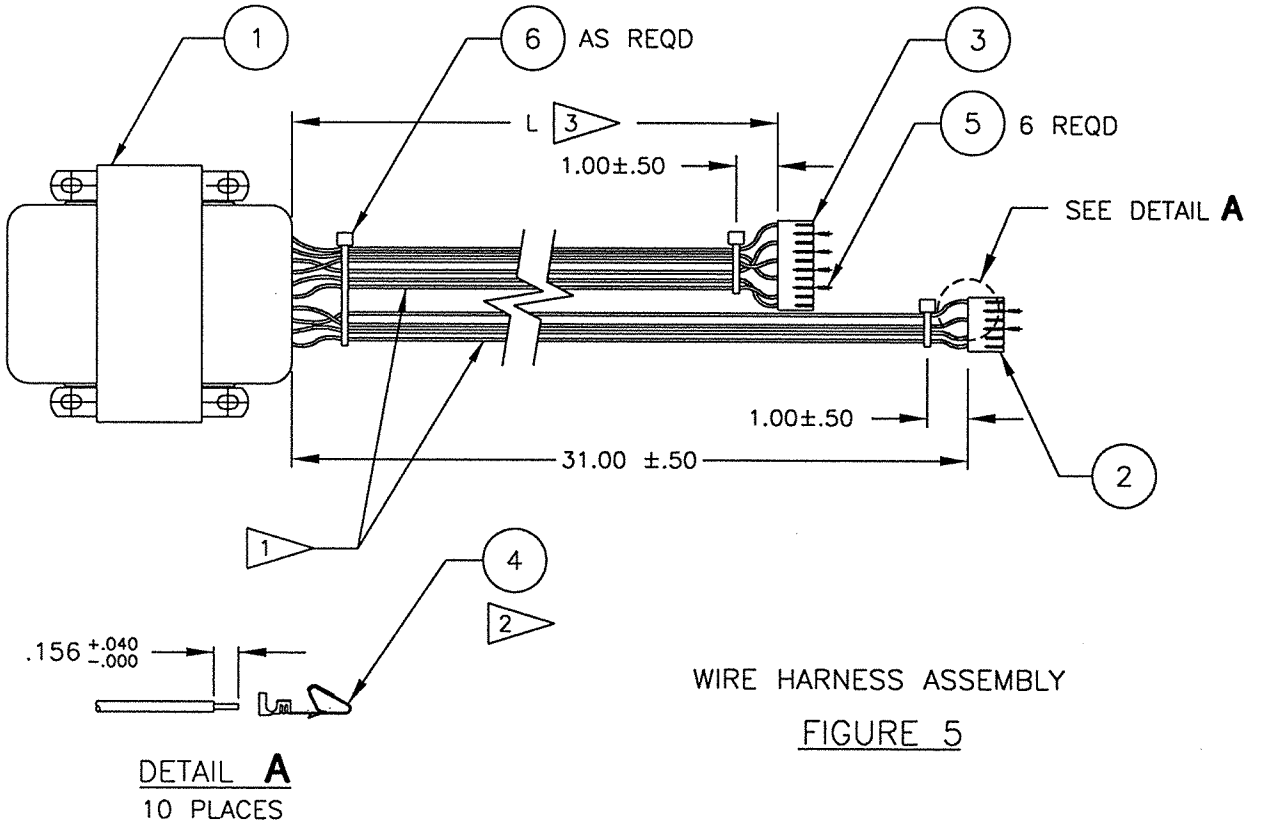
FIGURE 4

ITEM NO.	QTY	DESCRIPTION	PART NUMBER
1	1	TRANSFORMER, PER SPECIFICATIONS	
2	1	HOUSING, LOCKING CONNECTOR, 6 POSN	Molex #09-50-3061
3	1	HOUSING, LOCKING CONNECTOR, 10 POSN	Molex #09-50-3101
4	10	CONTACT, SOCKET	*
5	6	KEY, POLARIZING	Molex #15-04-0219
6	A/R	TIE, CABLE	eg. Panduit #PLT1M-M
7		WIRE, UL-RATED, 300V or 600V, 18 AWG	**

* FOR 300V, 18 AWG WIRE, USE: MOLEX #08-50-0705 OR #08-50-0706
FOR 600V, 18 AWG WIRE, USE: MOLEX #08-52-0071 OR #08-52-0072

** AS REQUIRED; COLORS TO COMPLY WITH REQUIREMENTS OF FIGURE 4

TABLE 2



WIRE HARNESS ASSEMBLY

FIGURE 5

DETAIL **A**
10 PLACES

NOTES: UNLESS OTHERWISE SPECIFIED

1. Reference the parts list (Table 2) for the wire type and the schematic (Figure 4) for the wire connections.

2. Crimp contact (Item 4) onto the wire (Item 7) using the manufacturer–accepted tool, prior to installation into connector housing (Items 2 and 3).

3. Source 1: L=29.25 ±.50 (Note: Wires exit from the other side of the transformer)
   Source 2: L=19.00 ±.50

6.0 MARKING:

Device must be clearly marked with the manufacturer's name or symbol, the Quinton part number, and rev level to which manufactured.

7.0 PACKAGING:

Items shall be suitably packaged for acceptance by common carrier for surface transportation, handling, and storage without detrimental effects to the items. Each product shipment from the manufacturer must contain written certification of compliance with approved construction details.

SIZE		DWG. NO.	REV
A	Quinton® instrument co.	032706	E
SCALE: NONE	SOURCE: ACAD		SHEET 6 OF 6

031164-004A

NOTES:

1. DELETED
2. DELETED
3. DELETED
4. DELETED
5. DELETED
6. DELETED
7. LOCATE LABELS (ITEMS 10 AND 11) APPROXIMATELY AS SHOWN.
8. INSTALL SILPAD (ITEM 4) WITH ADHESIVE TOWARDS CARD CAGE (ITEM 1).
9. LOOSELY INSERT BRIDGE RECTIFIER (ITEM 3) INTO PCBA (ITEM 2). DO NOT SOLDER.
10. MOUNT PCBA (ITEM 2) AND BRIDGE RECTIFIER (ITEM 3) TO CARD CAGE (ITEM 1) USING HARDWARE (ITEM 8). TORQUE ALL MOUNTING HARDWARE TO 8 TO 10 INCH POUNDS.
11. AFTER HARDWARE HAS BEEN TORQUED, SOLDER BRIDGE RECTIFIER (ITEM 3) TO PCBA (ITEM 2) AND TRIM LEADS,
12. PUT DRIVE PCBA CAGE ASSEMBLY, SIL PAD (ITEM 13) AND INSTALLATION INSTRUCTIONS (ITEM 19) IN AN ANTI-STATIC BAG AND THEN WRAP WITH ANTI-STATIC BUBBLE WRAP. PUT INTO SHIPPING CONTAINER (ITEM 12).
13. DELETED
14. 031225-002 IS AN ACCEPTABLE SUBSTITUTE ASSEMBLY.
15. CENTER LABEL (ITEM 18) ON PCBA DRIVE MODULE.
16. IF FIRMWARE IS DIFFERENT THAN THAT SPECIFIED ON PARTS LIST OR NOT INSTALLED, REMOVE FIRMWARE FROM U7 ON THE VSD PCBA (ITEM 2) AND INSTALL NEW FIRMWARE (ITEM 26 OR 27) INTO SOCKET U7.

REVISIONS

LTR	ZONE	DESCRIPTION	APPROVED	DATE
R		CPN: 51739 DCN: 51736 ITEM 26, P/N WAS; 036450-001 ITEM 26 -001, QTY WAS; - FLAG NOTE 16, WAS; REMOVE ANY EXISTING ..... U7. IS; IF... INSTALLED REMOVE... U7. SH4, MOVED ITEM 26 AND 27 FROM -003, -004 ONLY AND ADDED IT TO SH3 -001, -003 AND -004 ACTION CODE: J1, THE CONFIGURATIONS THAT ARE CHANGING HAVE BEEN MFG. SO THERE IS NO ACTION FOR EXISTING PARTS OR ASSY'S. EXISTING BOMs NEED REVISED TO NEW CONFIGURATION. MODIFIER: DATE OF RELEASE	C. Estmarks S. Carson C. Reed D. VanVeenta	7/5/00 7/11/00 7/11/00 7/19/00

-004	-003	-002	-001	ITEM NUMBER	PART NUMBER	DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION
3	3	-	-	28	012029-005	WASHER, INTERNAL STAR	#6	
-	1	-	-	27	036450-002	FIRMWARE, OEM STRESS DRIVE	1-12mph	U7
1	-	-	1	26	035957-001	FIRMWARE, OEM STRESS DRIVE	8-9.6mph	U7
2	2	-	-	25	030579-009	SCREW, MACH, SEMS, PHD PH	6-32 X .38L	
2	2	-	-	24	001164-001	WASHER, FLAT	#6	
4	4	-	-	23	030579-002	SCREW, MACH, SEMS, PHD PH	4-40 X .25L	
1	1	-	-	22	032780-002	PCBA, DIGITAL TREDML INTRF		
3	3	-	-	21	010828-122	SCREW, MACH, PHD PH	6-32 X 1.50L	
1	1	-	-	20	036434-001	PLATE, PCBA MOUNT		
-	-	1	-	19	035895-350	INST. INSTR, VSD ASSY.		
1	1	1	1	18	034674-001	WARNING LABEL, POWER MODULE		
16	16	-	16	17	034212-001	POP RIVET, CLOSED END	1/8" ALUM.	
AR	AR	-	AR	16	034208-001	STRIP CHANNEL, NYLON, LUBRICATED		
16	16	-	16	15	011560-002	MOUNT, CABLE TIE		
				14	DELETED			
-	-	1	-	13	033174-004	SIL PAD		
-	-	1	-	12	031367-006	SHPNG CNTNR ASSY, MDM SVCE		
1	1	-	1	11	033482-001	LABEL, DANGER	HIGH VOLTAGE WARNING	
1	1	-	1	10	016222-003	LABEL, CAUTION	INT'L SHOCK HAZARD SYMBOL	
				9	DELETED			
8	8	-	11	8	030579-027	SCREW, MACH, SEMS, PNH PH	6-32 UNC-2A X .75LG	
				7	DELETED			
				6	DELETED			
				5	DELETED			
1	1	-	1	4	033174-001	SIL PAD		
1	1	-	1	3	031127-003	BRIDGE RECTIFIER, 35A		
1	1	-	1	2	031225-001	PCBA, VSD		
1	1	-	1	1	032974-001	CARD CAGE		
	-	-	-	-	-004	CAGE ASSEMBLY, DRIVE PCBA		
-		-	-	-	-003	CAGE ASSEMBLY, DRIVE PCBA		
-	-		-	-	-002	CAGE ASSEMBLY, DRIVE PCBA	SPARES	
-	-	1		-	-001	CAGE ASSEMBLY, DRIVE PCBA		

PARTS LIST

PART NO.	NEXT ASSY NO.	END ITEM NO.
-004	036436	000488 000489
-003	036436	000475
-002	MARKET	MARKET
-001	032359	000377 000378 000380 000382 000383 000390 000402 000425

APPLICATION

QTY PER ASSEMBLY

DO NOT SCALE DRAWING

TOL: .X ± ---- ; .XX ± 0.01 ; .XXX ± 0.001
ANGLE: BENT ± --- ; MACHINED ± ---

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES
DIMENSIONS AND TOLERANCES PER ANSI Y14.5-1982

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DRAWN:	K. Restoule	12/14/94
ENGR:	S. Deckers	1/25/95
MFG:	B. Trathen	1/27/95
QUAL:	K. Bailey	4/28/95
COMPL:	B. Nafea	4/28/95
MKTG:		
TECH SVCE:		

StairMaster® SPORTS/MEDICAL PRODUCTS, INC.

TITLE
CAGE ASSEMBLY, DRIVE PCBA

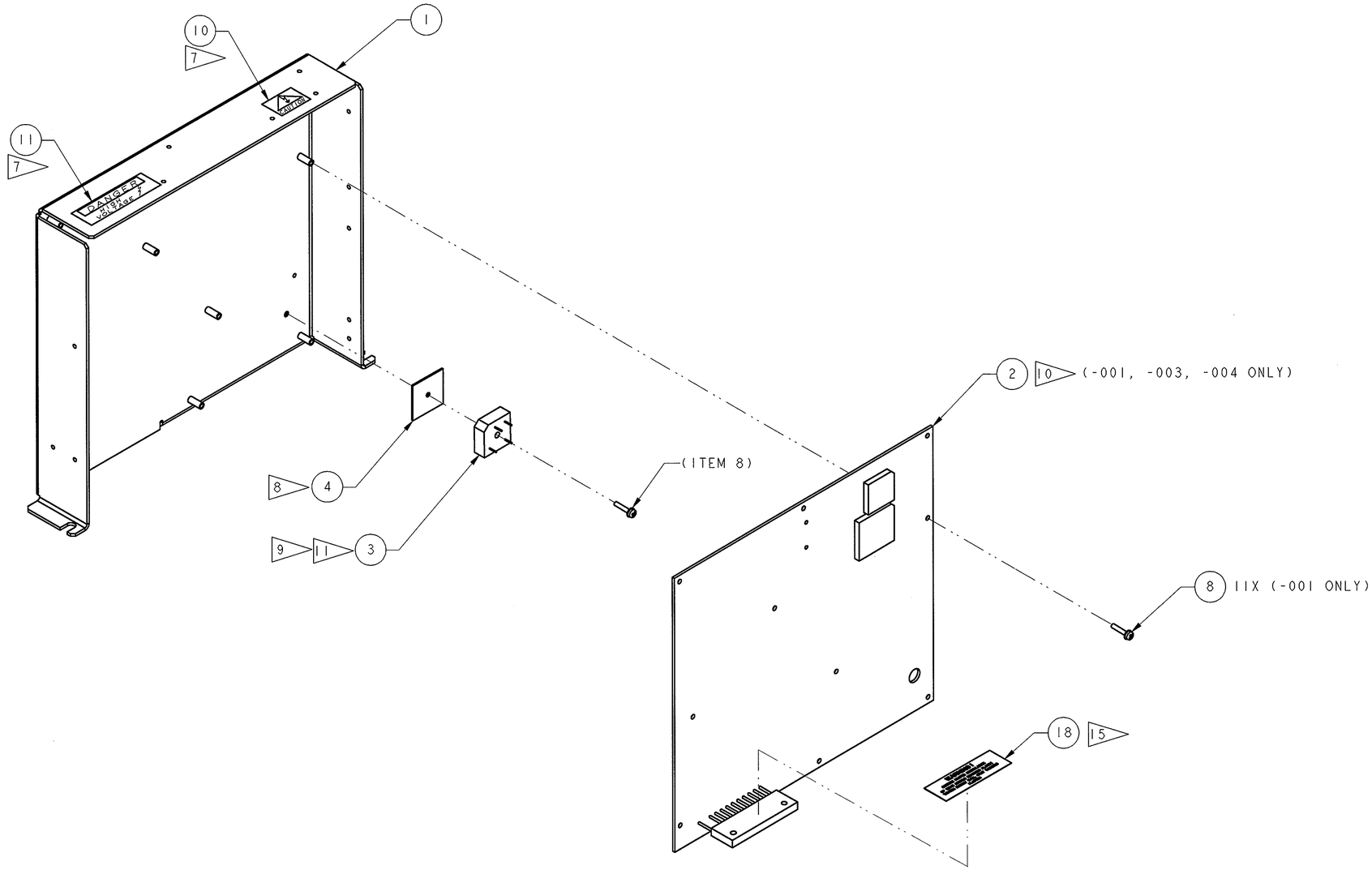
SIZE	MODEL	DWG NO.	REV
D	TREDML	032975	R

SCALE 1/2 | SOURCE PRO | SHEET 1 OF 4

PRODUCTION
DRAWING RELEASE STATUS

DWG NO. 032975 SH 1 REV R

DFORMATS-A SHT1



-001, -003, AND -004
(EXCEPT AS NOTED)

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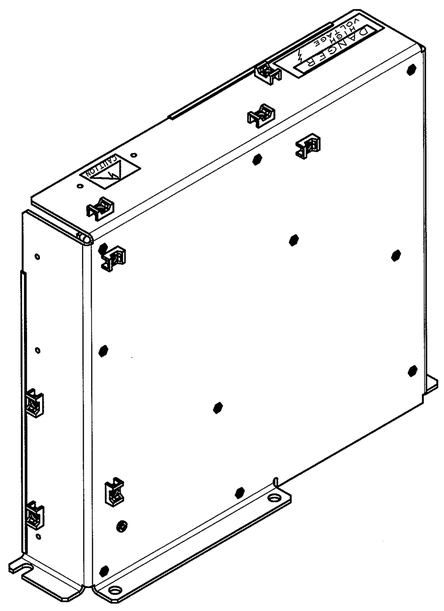
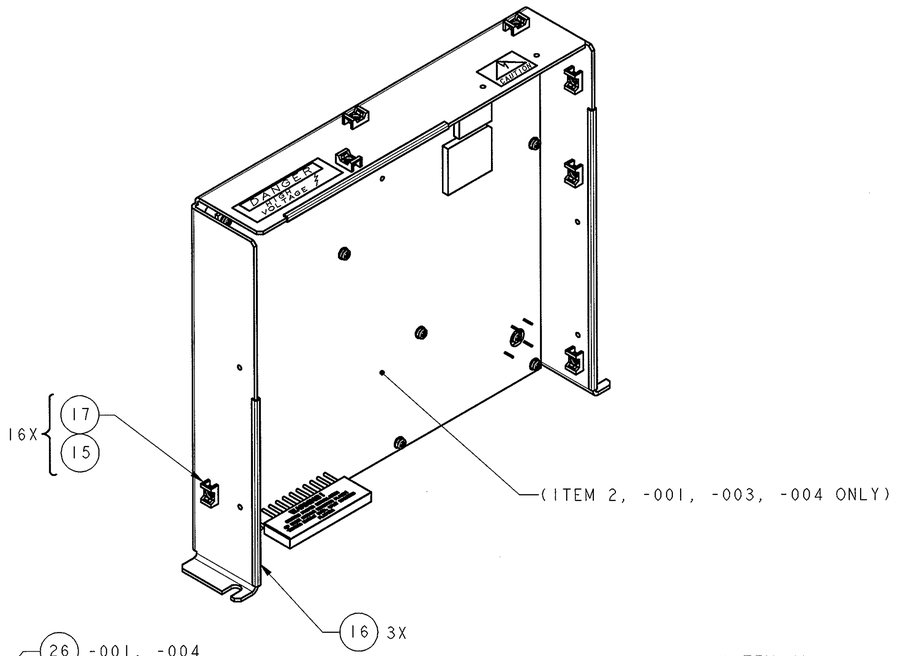
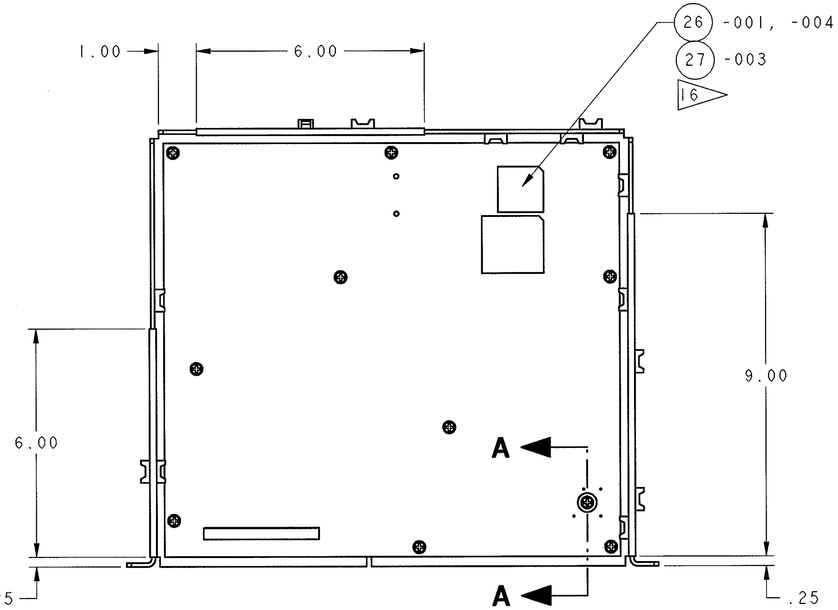
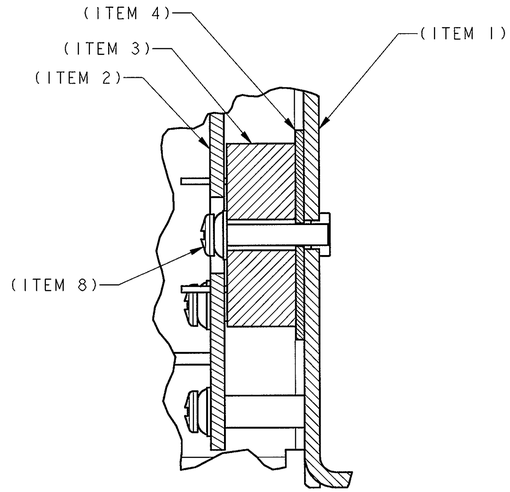
		SCALE 1/2	SOURCE PRO	SHEET 2 OF 4	







-001, -003, AND -004
(EXCEPT AS NOTED)



SECTION A-A
SCALE 2/1

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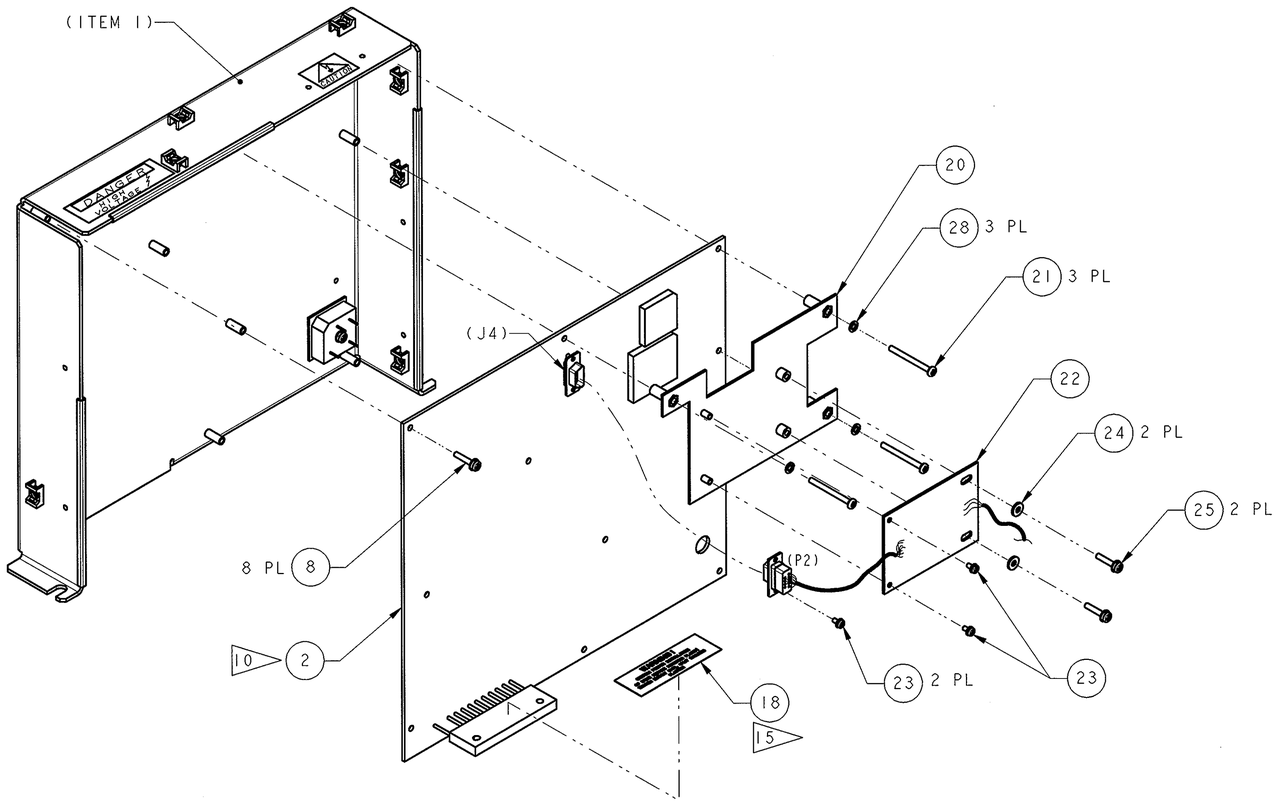
DRAWING RELEASE STATUS		SCALE 1/2		SOURCE PRO	SHEET 3 OF 4

DFORMATS-A SHT2

DWG NO. 032975 SH 3 REV R



-003 & -004 ONLY

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		SCALE 1/2		SOURCE PRO	SHEET 4 OF 4

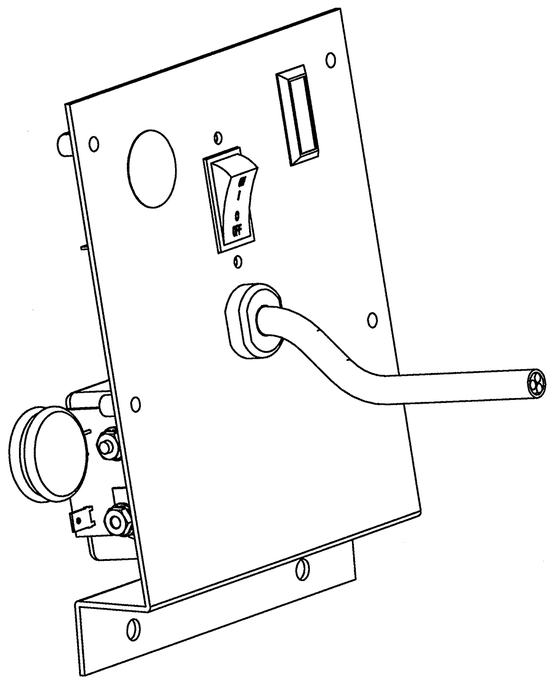
DFORMATS-A SHT2

032975 R

REVISIONS				
LTR	ZONE	DESCRIPTION	APPROVED	DATE
P		CPN: 52395 DCN: 52393 SHEET 1, PARTS LIST, -ITEM 3 P/N WAS: "031396-015", -ITEM 4 P/N WAS: "031396-014", -ITEM 15 WAS: "010827-142", DESC. WAS: "SCREW, PAN HEAD, PHILLIPS, 6-32 X .25L", -ITEM 16 WAS: "012029-005, WASHER, LOCK, STAR, INTERNAL"	D.SCHUMACHER R. BUTCHART D. VanDeVenter	10/13/00 10/16/00 10/25/00 11-18-00
	C7	-SHTS 3,4,5,6,7,8, LEFT VIEW: REMOVED ITEM 16 CALLOUT NEXT TO ITEM 15 ACTION CODE: F1, MOD: DATE OF RELEASE		

NOTES:

1. MARK WITH PART NO. AND REV. LETTER TO WHICH MFD. IN APPROXIMATE LOCATION SHOWN.
2. ADD LOCTITE (ITEM 24).
3. PART OF ITEM 29.
4. PART OF ITEM 30.
5. PART OF ITEM 31.
6. DELETED
7. DELETED
8. TWIST WIRES TO FORM TWISTED PAIRS, APPROXIMATELY 1 TWIST PER INCH.
9. DELETED
10. PART OF ITEM 8 OR 9.
11. ITEM MUST BE HORIZONTAL WITHIN .060 TOTAL.



(-001 SHOWN)

CONTINUED ON SHEET 2

-006	-005	-004	-003	-002	-001	ITEM NUMBER	PART NUMBER	DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION
-	-	4	-	-	-	23	030577-001	NUT,HEX,LOCKWASHER,KEP	4-40	
						22	DELETED			
						21	DELETED			
2	-	2	2	-	-	20	019032-013	SCREW, JACK	MALE/FEMALE STANDOFF	
-	-	2	-	2	-	19	030579-004	SCREW, PN HD SEMS	4-40 X .375 L.	
8	8	8	8	8	8	18	012029-006	WASHER, LOCK, STAR, INTERNAL	#8	
6	6	6	6	6	6	17	016839-026	NUT, HEX	8-32	
						16	DELETED			
2	2	2	2	2	2	15	036497-012	SCREW, SEM, PHP, EXT STAR	M3 X 6	
-	-	-	1	-	1	14	030610-004	CORD, POWER	115 v.	
-	-	-	-	-	-	13	DELETED			
-	-	1	-	1	-	12	016950-003	LABEL, ATTENTION	INTERNATIONAL	
-	1	-	-	1	1	11	017829-002	COVER, CONNECTOR CUTOUT	D-SUBMINIATURE, 9 PIN	
1	1	-	1	1	1	10	011163-013	PLUG, HOLE	1.00 INCH	
-	-	1	-	1	-	9	032533-002	RFI NOISE FILTER	10ESK1	
1	1	-	1	-	1	8	032533-001	RFI NOISE FILTER	SUP-E20H-EP	
1	-	-	1	-	-	7	033166-001	ASSY, CABLE, TM COMM		
-	-	1	-	1	-	6	031453-001	CONNECTOR, POWER INLET,	IEC 320, 16 AMP	
1	1	-	1	-	1	5	001227-011	STRAIN RELIEF		
1	1	1	-	1	-	4	031396-022	CIRCUIT BREAKER	2 POLE, 10 AMP	
-	-	-	1	-	1	3	031396-023	CIRCUIT BREAKER	2 POLE, 20 AMP	
-	-	1	-	1	-	2	032482-002	PLATE, CONFIGURATION	EUROPEAN	
1	1	-	1	-	1	1	032482-001	PLATE, CONFIGURATION	U.S.A.	
	-	-	-	-	-	-	-006	CONFIGURATION PLATE,	ST 55/65, U.S.A.	10A
-		-	-	-	-	-	-005	CONFIGURATION PLATE,	CLUBTRACK, U.S.A.	10A
-	-		-	-	-	-	-004	CONFIGURATION PLATE,	ST 55/65, EUROPEAN	10A
-	-	-		-	-	-	-003	CONFIGURATION PLATE,	ST 55/65, U.S.A.	20A
-	-	-	-		-	-	-002	CONFIGURATION PLATE	CLUBTRACK, EUROPEAN	10A
-	-	-	-	-		-	-001	ASSEMBLY, PLATE CONFIGURATION, T/M	CLUBTRACK, U.S.A.	20A

PARTS LIST

PART NO.	NEXT ASSY NO.	END ITEM NO.
-006	032359	000383 000378
-005		000390 000382 000380 000377
-004		000383 000378
-003		000383 000378
-002		000390 000382 000380 000377
-001		000390 000382 000380 000377

APPLICATION

QTY PER ASSEMBLY — DO NOT SCALE DRAWING

TOL: .X ± 0.1; .XX ± 0.01; .XXX ± 0.001 — ANGLE: BENT ± 2°, MACHINED ± 0.5°

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES
DIMENSIONS AND TOLERANCES PER ANSI Y14.5-1982

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DRAWN:	DERNOVSEK	1/13/95
ENGR:	B.LOBBEREGT	3/3/95
MFG:	S.M.CURRAN	3/3/95
QUAL:	K.W.BAILEY	3/6/95
COMPL:	B.NAFEA	3/7/95
MKTG:	———	
TECH SVCE:	———	

StairMaster® SPORTS/MEDICAL PRODUCTS, INC.

TITLE
ASSEMBLY, PLATE CONFIGURATION, T/M

SIZE	MODEL	DWG NO.	REV
D	TREDML	032776	P
SCALE 1/1	SOURCE PRO	SHEET 1 OF 10	

PRODUCTION
DRAWING RELEASE STATUS

DFORMATS-A SHT1

DWG NO. 032776 1ST P

-006	-005	-004	-003	-002	-001	ITEM NUMBER	PART NUMBER	DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION
-	-	1	-	-	-	38	034098-001	CABLE ASSY, TM COMM, INTL		
1	1	-	-	-	-	37	033311-005	WIRE SET, CONFIGURATION PLATE	230V	
1	1	-	-	-	-	36	030610-005	CORD, POWER	230V	
1	1	1	-	1	-	35	033582-001	TREADMILL INRUSH LIMITER	230V	
-	-	-	1	-	1	34	033582-002	TREADMILL INRUSH LIMITER	115V	
-	-	1	-	1	-	33	031834-003	SUPPRESSOR, FERRITE BEAD		
-	-	1	-	1	-	32	031453-011	CONNECTOR LOCK		
-	-	1	-	1	-	31	033311-004	WIRE SET, CONFIGURATION PLATE	230V	
-	-	-	1	-	1	30	033311-003	WIRE SET, CONFIGURATION PLATE	115V	
-	-	1	-	-	-	29	033315-004	ASSY, HARNESS, CONFIGURATOR		
1	1	-	-	1	-	28	033315-002	ASSY, HARNESS, CONFIGURATOR		
-	-	-	1	-	1	27	033315-001	ASSY, HARNESS, CONFIGURATOR		
AR	AR	AR	AR	AR	AR	26	001899-001	TIE, CABLE		
3	3	3	3	3	3	25	010561-001	ANCHOR, TIE		

PRODUCTION

DRAWING RELEASE STATUS

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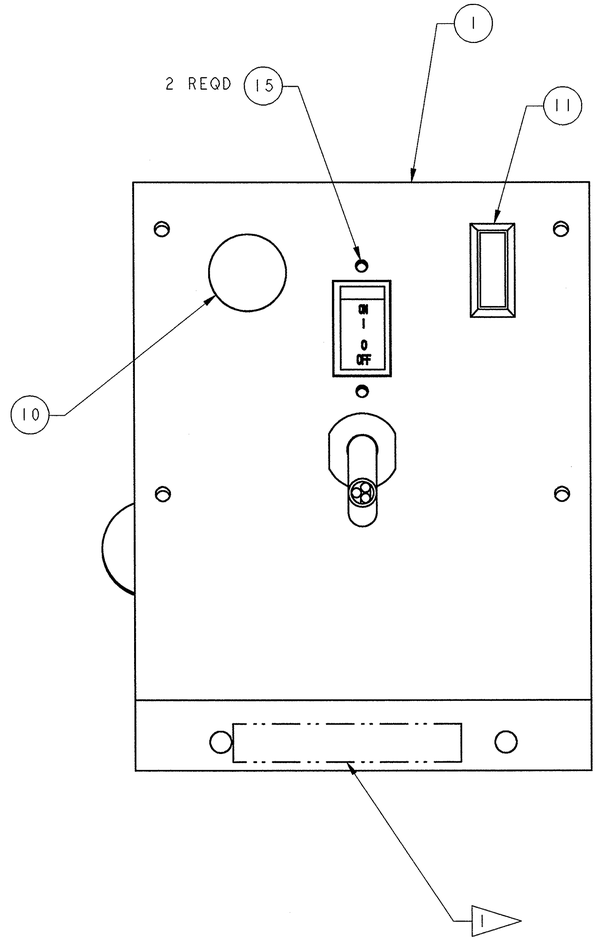
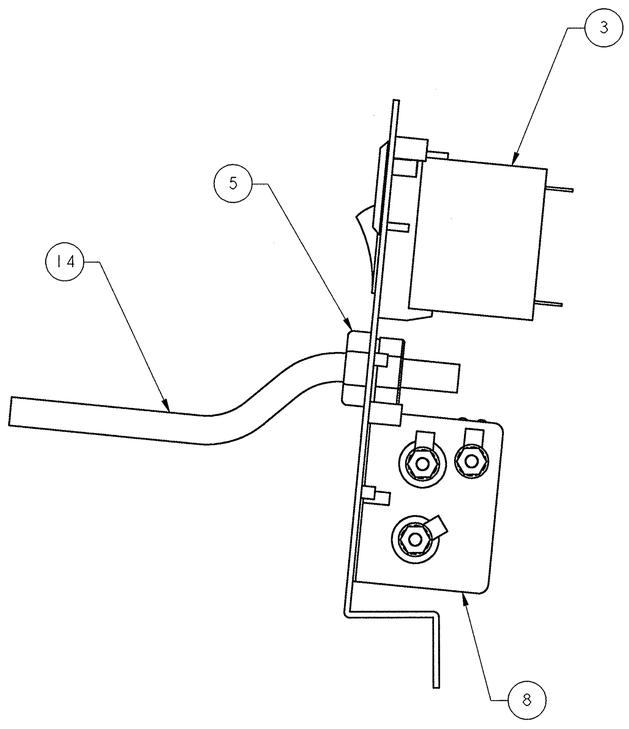
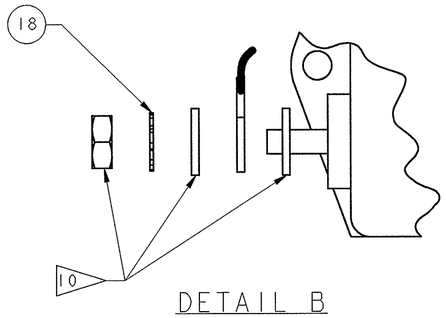
SIZE	MODEL	DWG NO.	REV
D	TREADMILL	032776	P
SCALE NONE		SOURCE PRO	SHEET 2 OF 10

032776 2 P

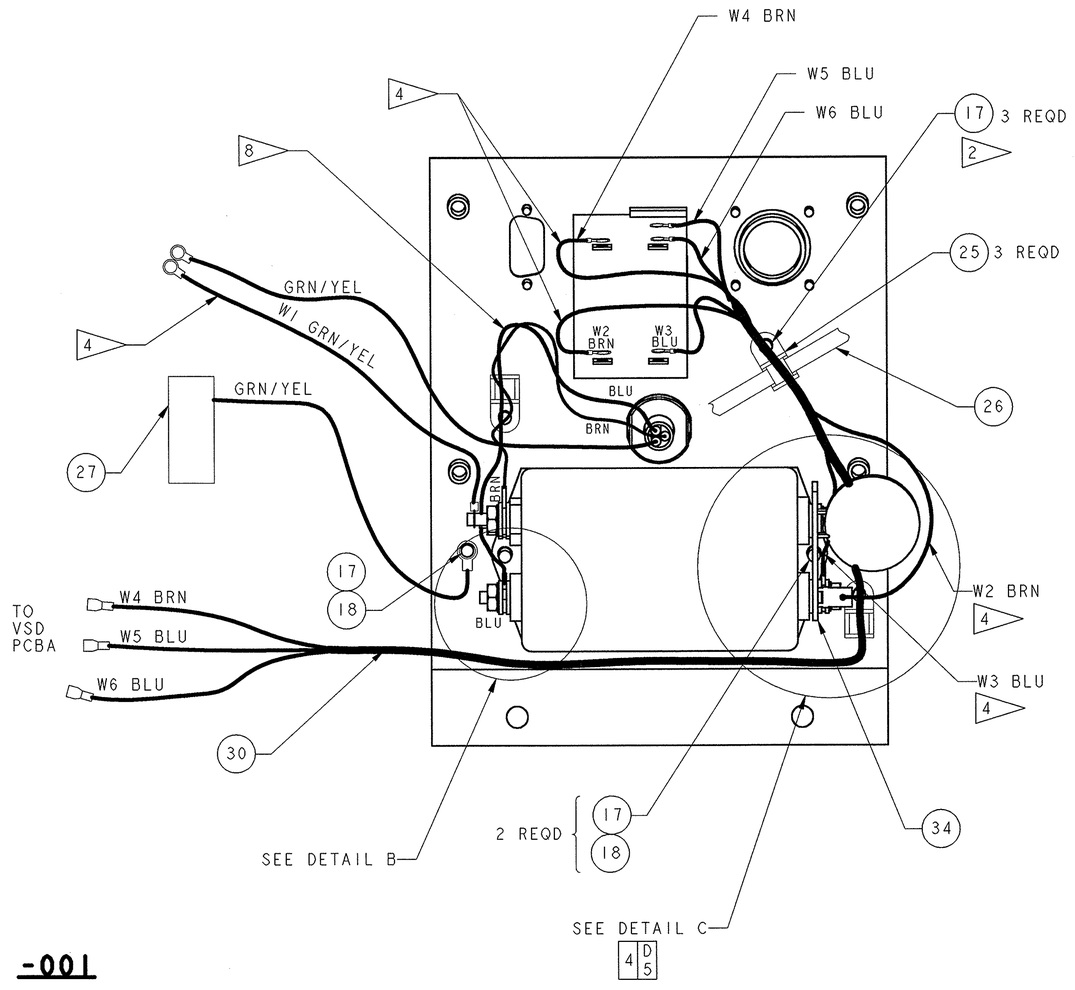
DFORMATS2







DETAIL B
SCALE 2:1
3 PL



-001

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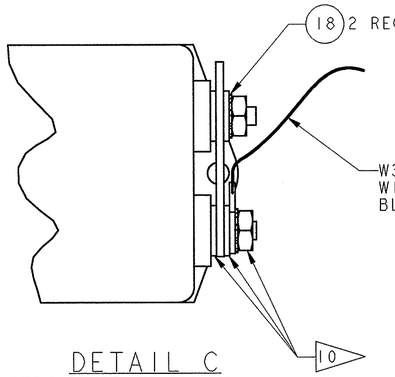
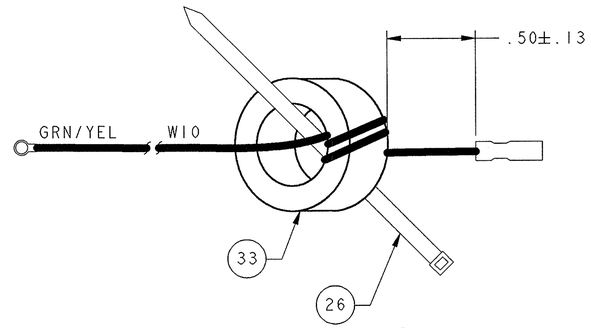
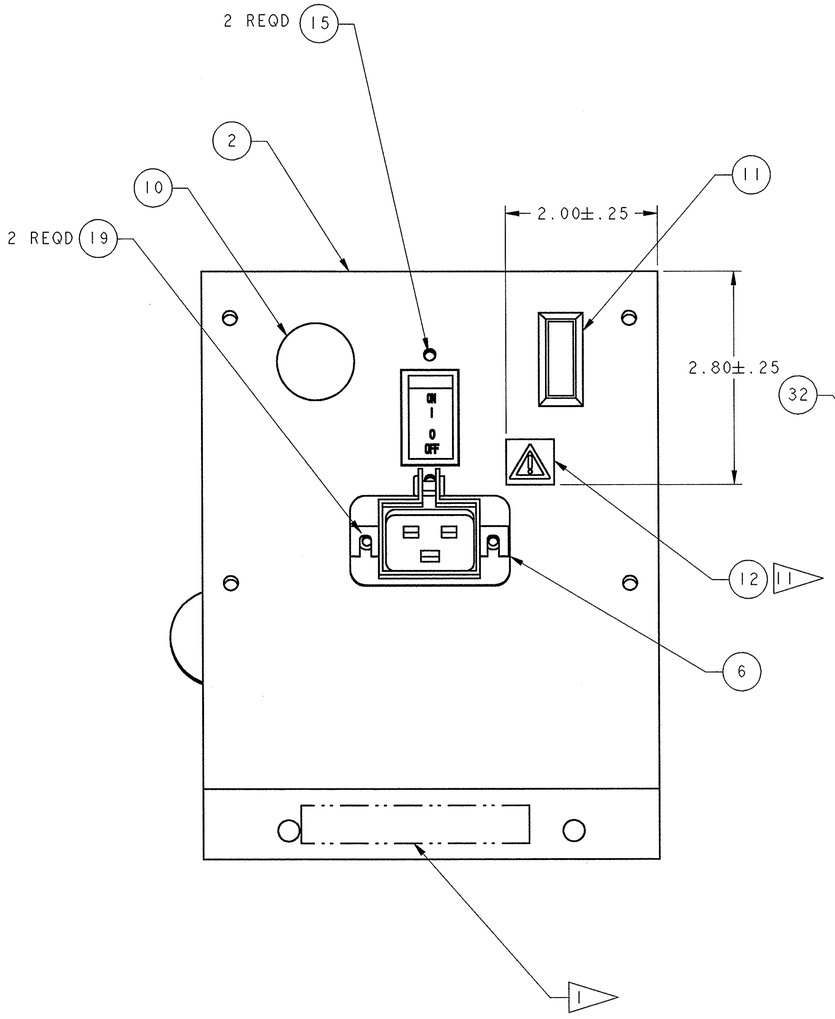
SIZE	MODEL	DWG NO.	REV
D	TREADMILL	032776	P
SCALE 1/1		SOURCE PRO	SHEET 3 OF 10

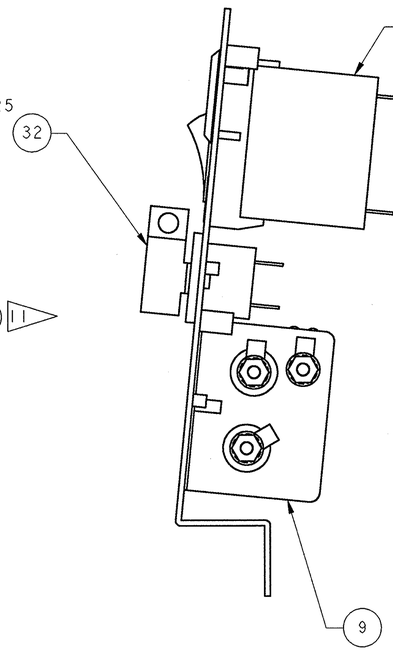


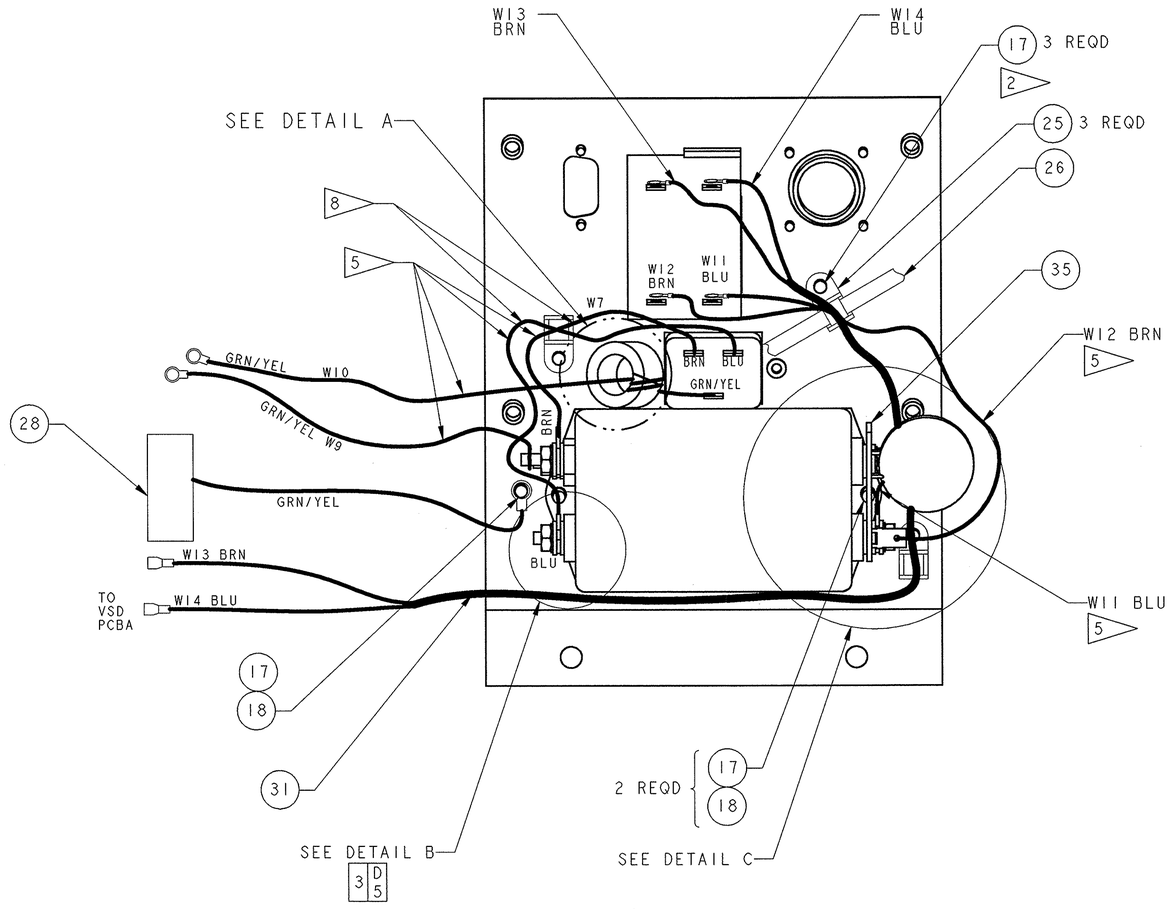
DETAIL C
ITEM 34 OR 35 COMPONENTS
DELETED FOR CLARITY
SCALE 1.5:1



DETAIL A
SCALE: 2/1







-002

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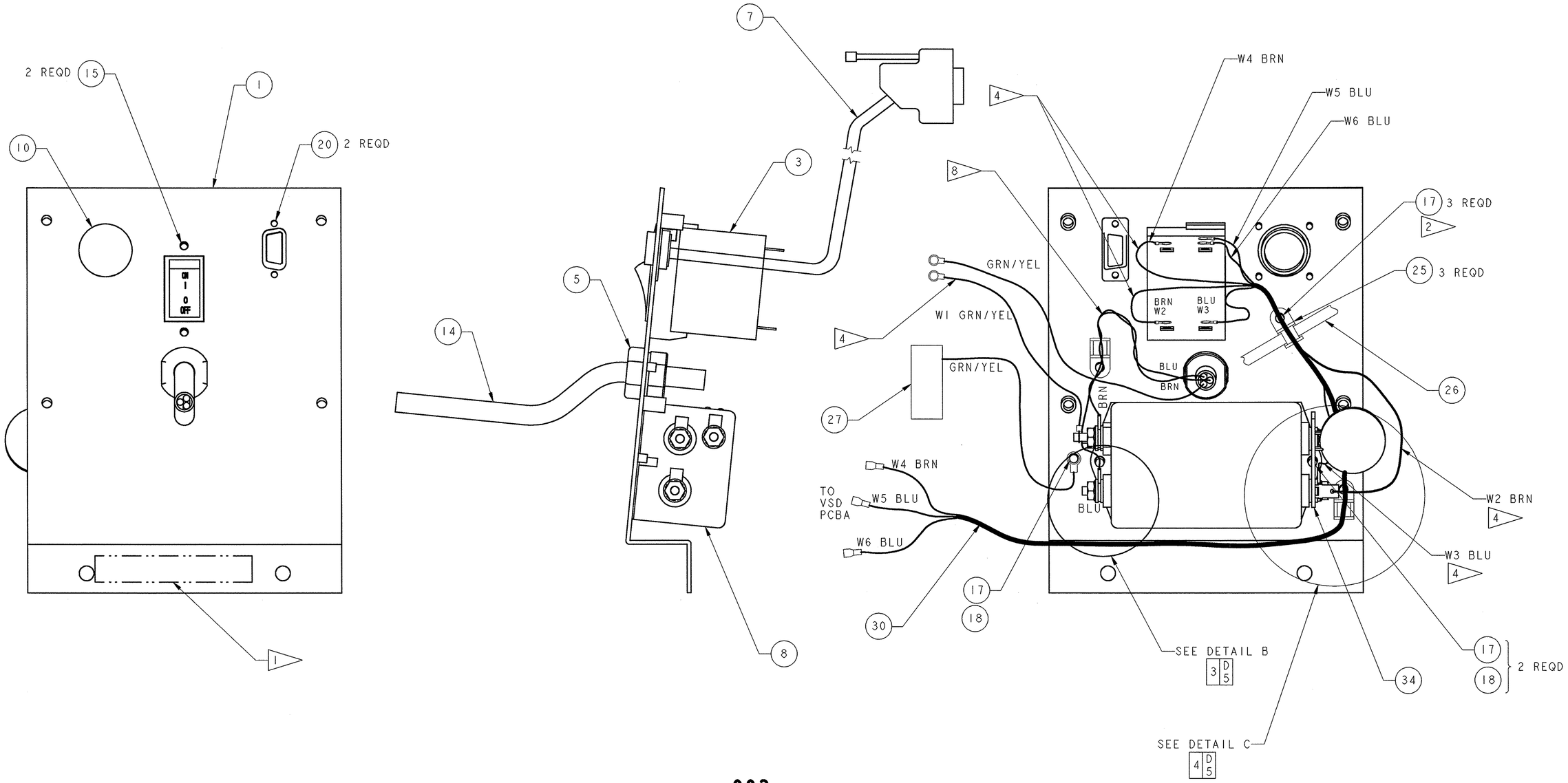
		SCALE 1/1		SOURCE PRO	SHEET 4 OF 10

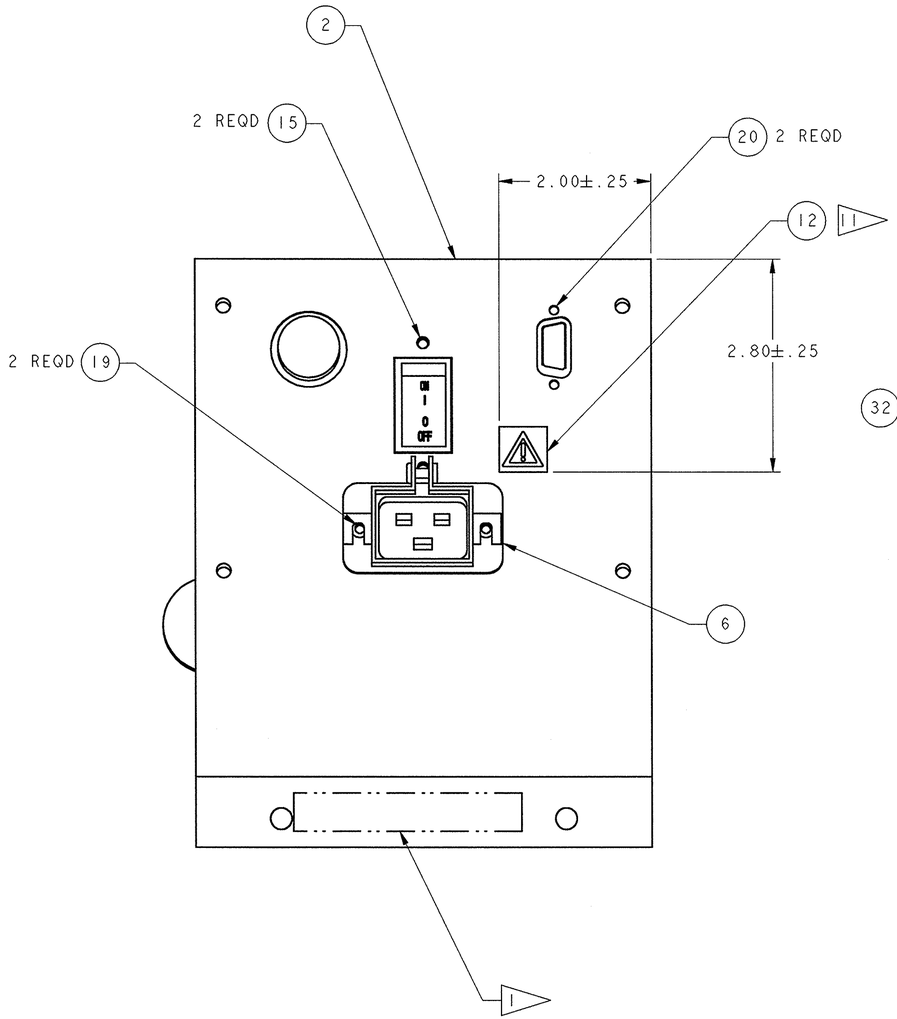
DFORMATS2

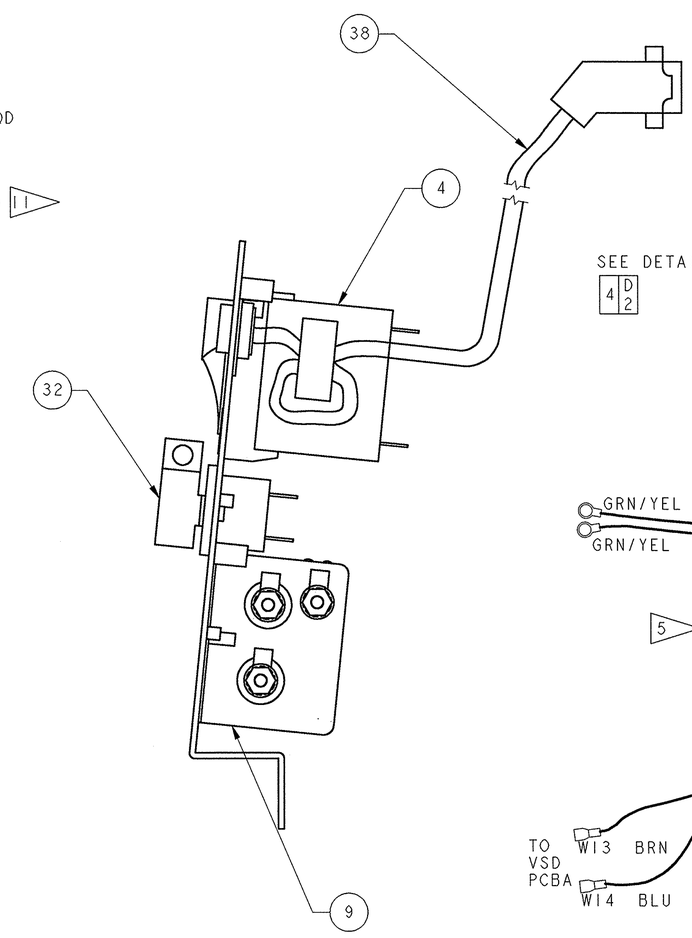


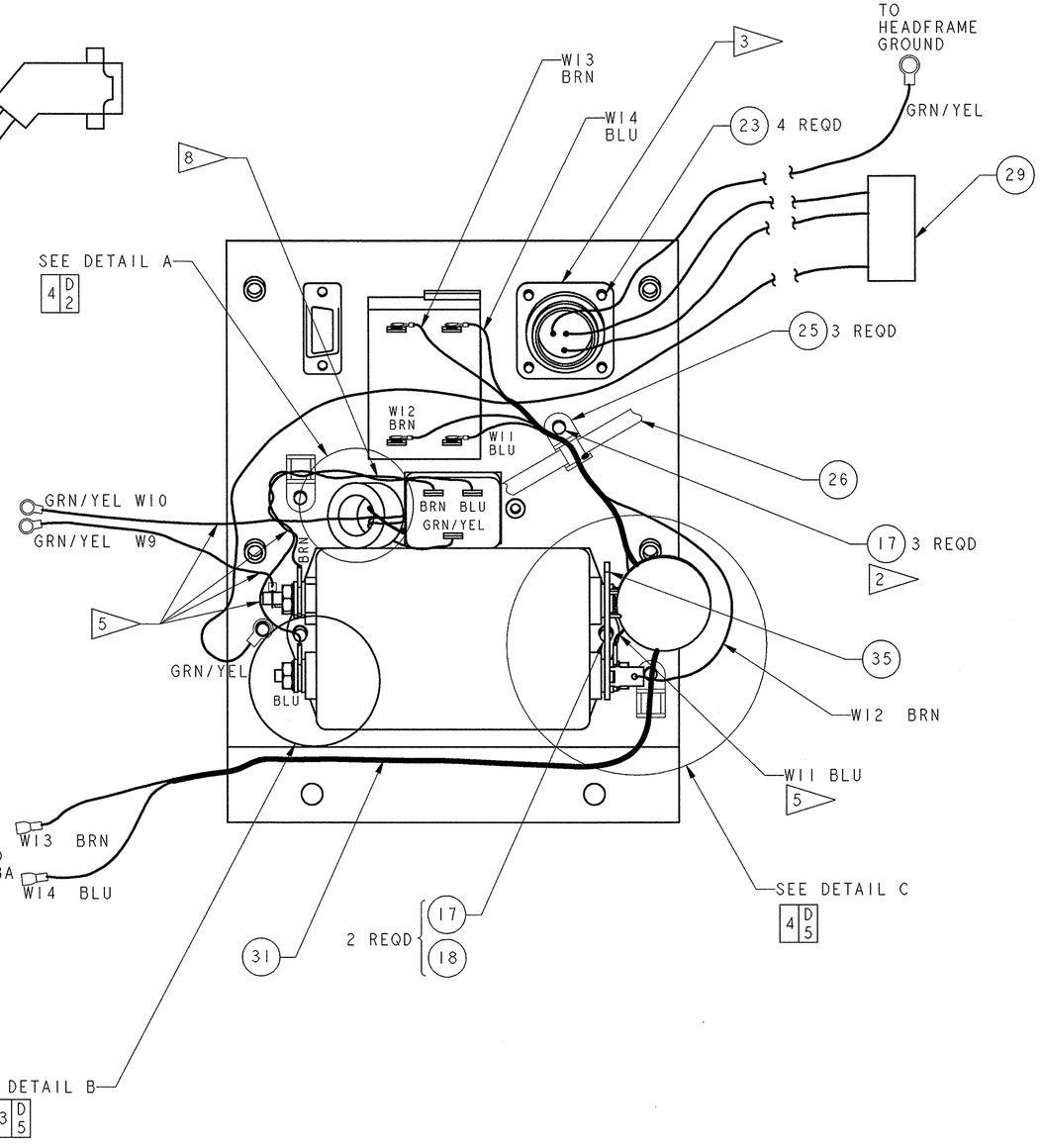
-003

PRODUCTION	CONFIDENTIAL & PROPRIETARY	SIZE	MODEL	DWG NO.	REV
DRAWING RELEASE STATUS	THIS DOCUMENT IS THE PROPERTY OF STAIRMASTER© SPORTS/MEDICAL PRODUCTS, INC. IT MAY NOT BE REPRODUCED IN WHOLE OR IN PART, PROVIDED TO THIRD PARTIES, OR USED FOR ANY PURPOSE OTHER THAN THE PERFORMANCE OF WORK FOR STAIRMASTER, WITHOUT WRITTEN AUTHORIZATION. ALL RIGHTS ARE RESERVED INCLUDING COPYRIGHTS.	D	TREADMILL	032776	P
		SCALE 1/1		SOURCE PRO	SHEET 5 OF 10

DFORMATS2







-004

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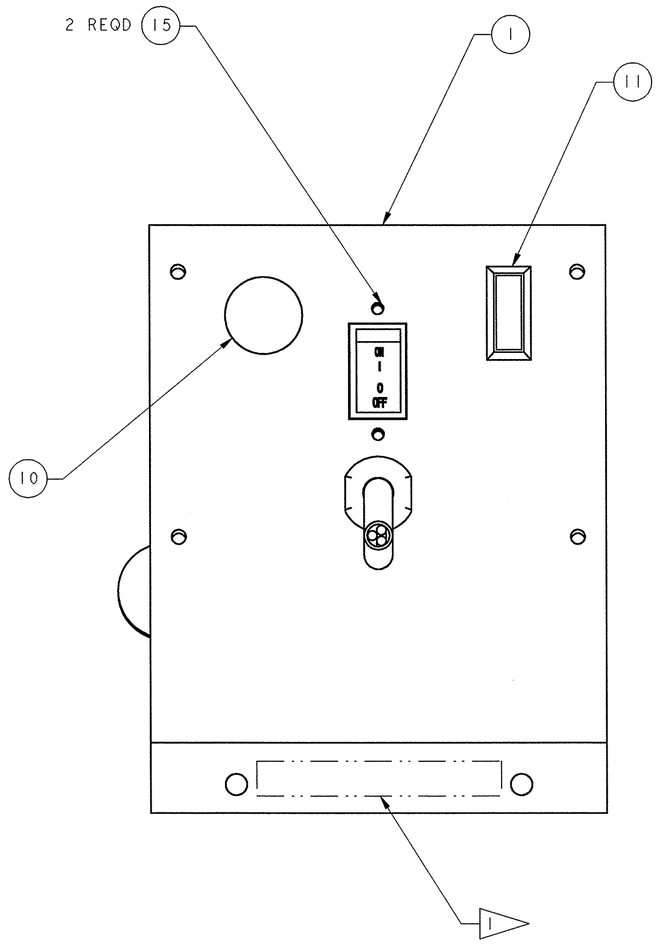
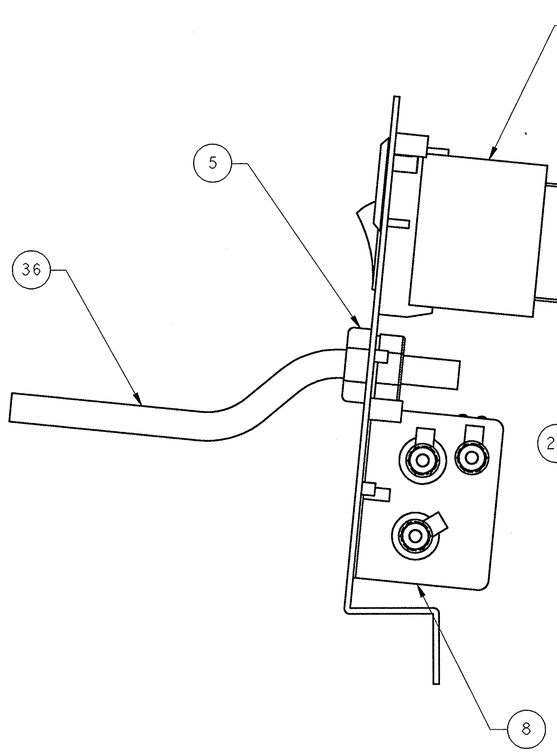
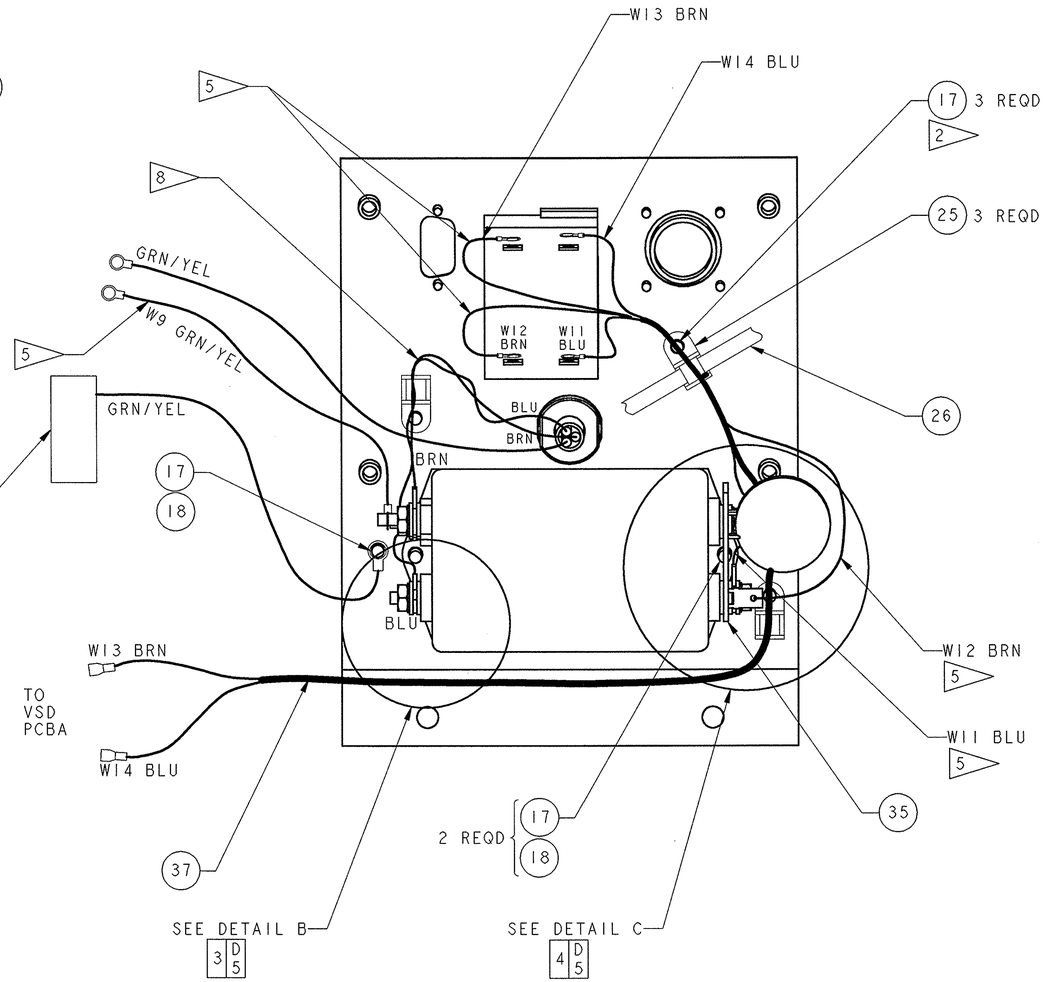
		SCALE 1/1		SOURCE PRO	SHEET 6 OF 10

032776 6 P

DFORMATS2







-005

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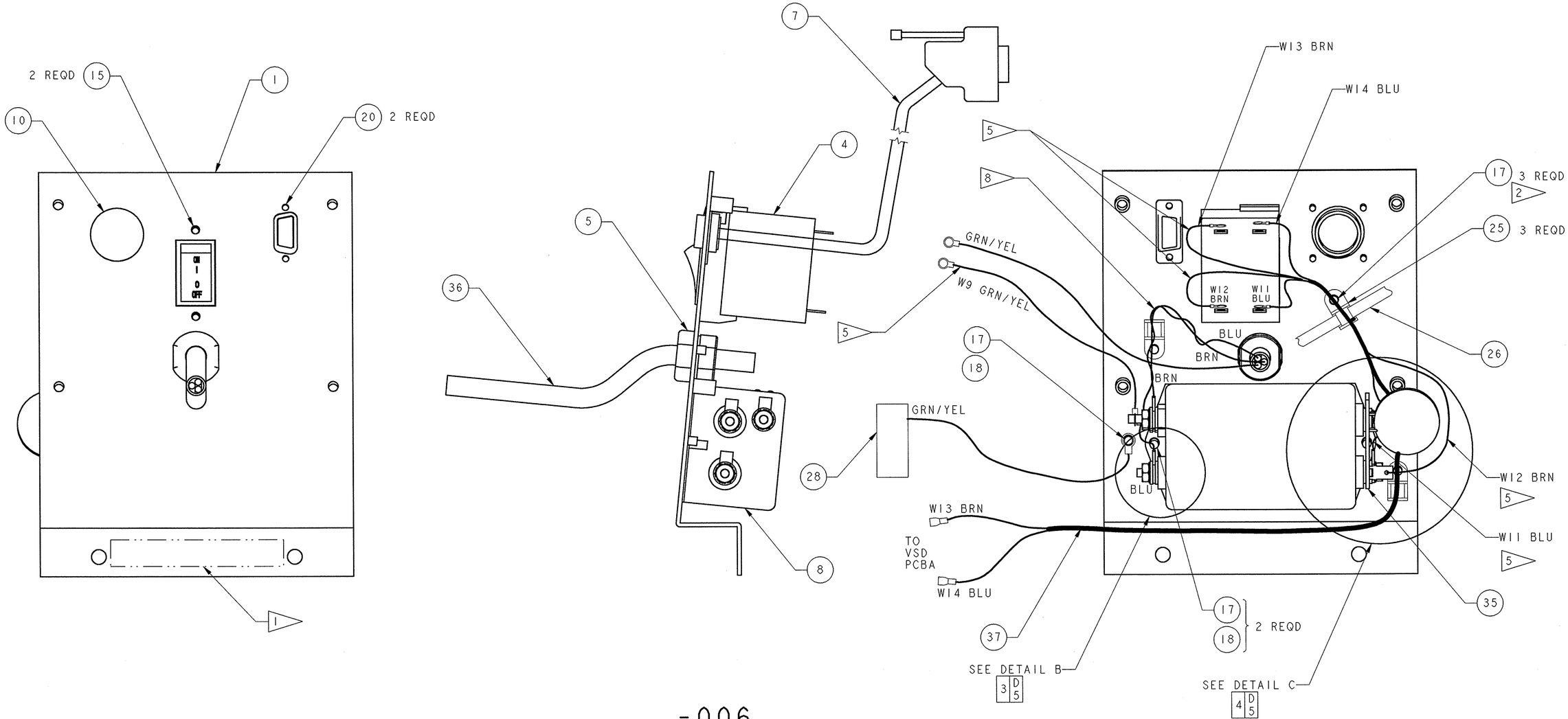
		SCALE 1/1		SOURCE PRO	SHEET 7 OF 10

DFORMAT52



-006

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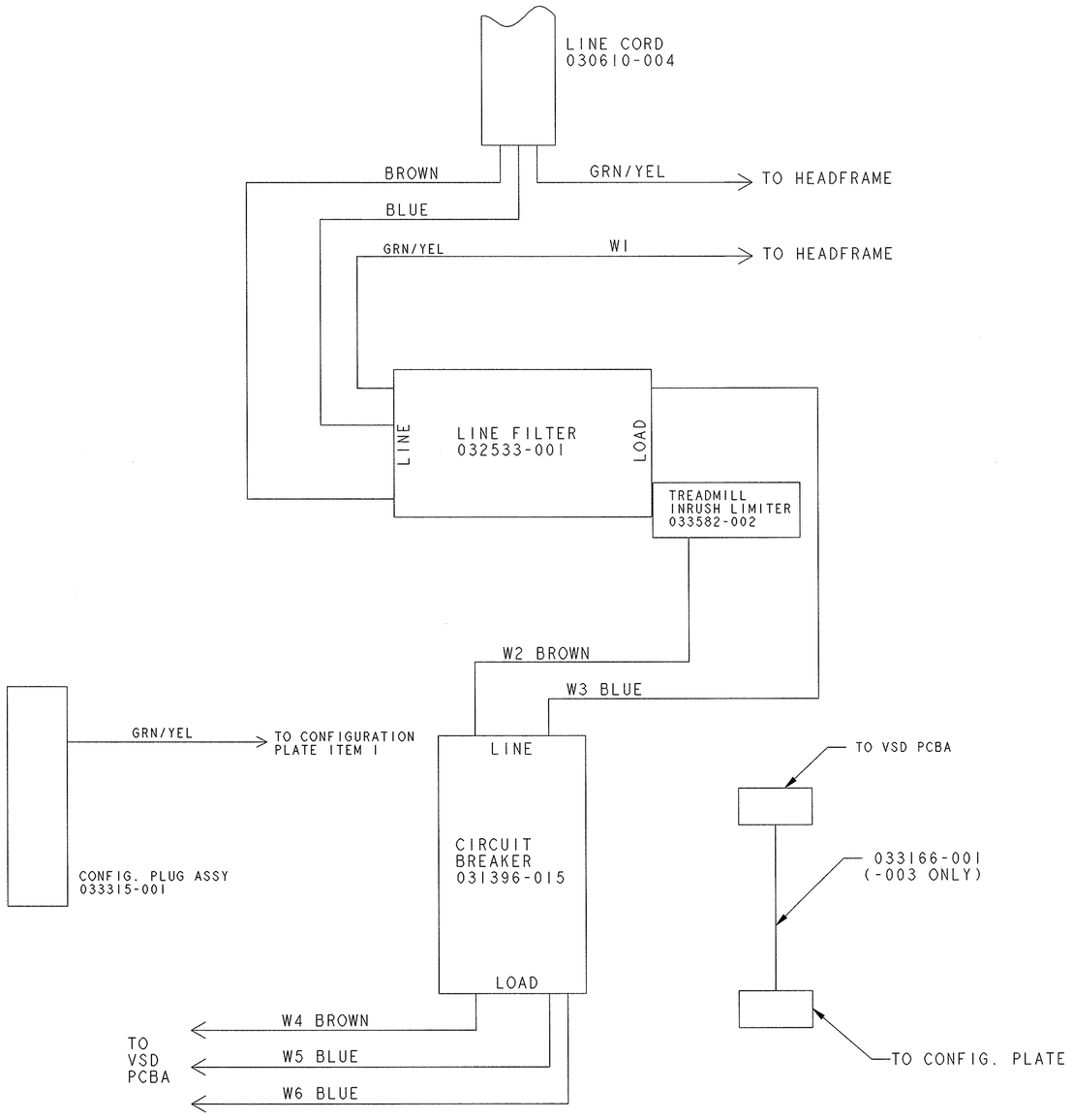
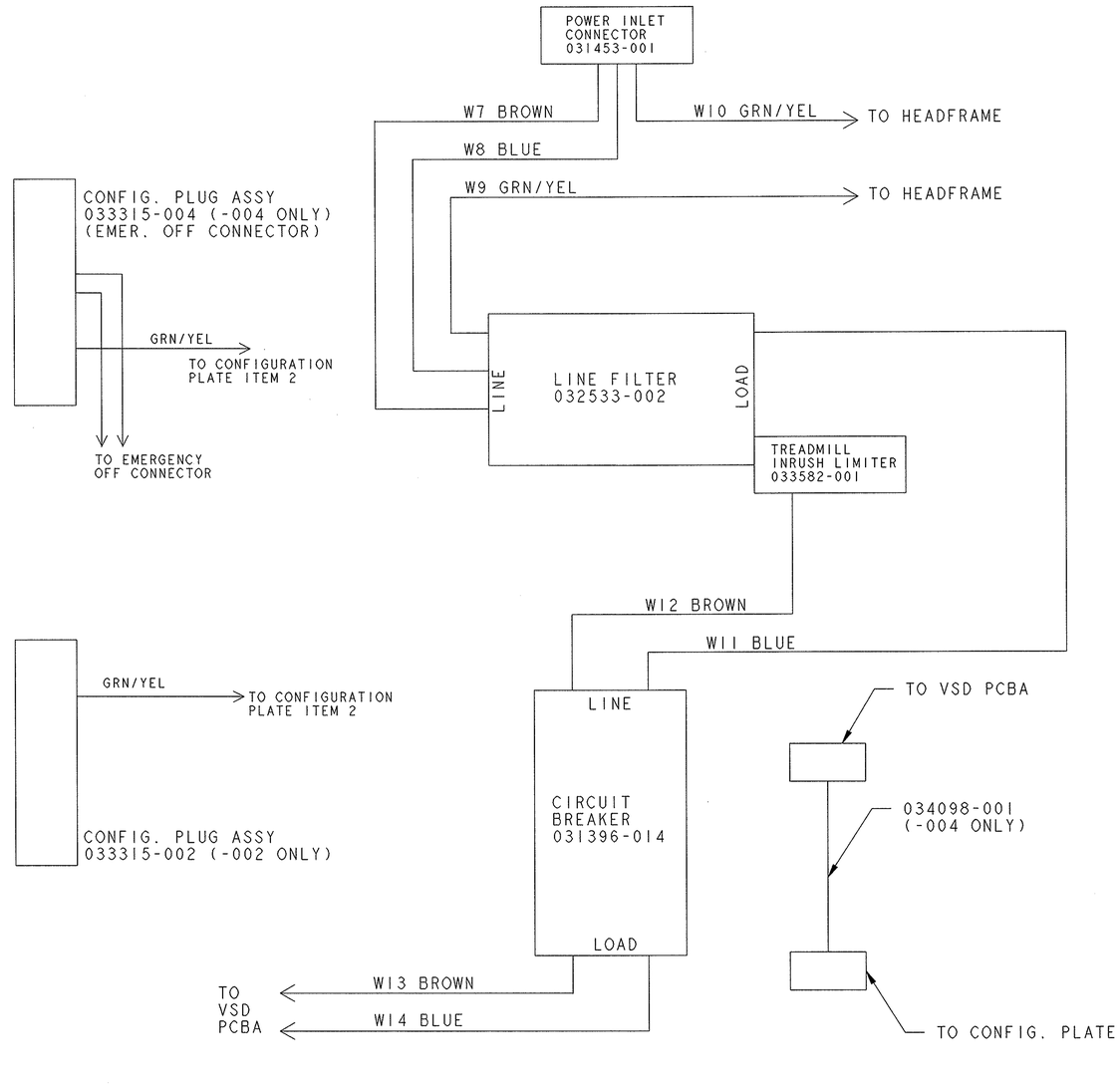
		SCALE 1/1	SOURCE PRO	SHEET 8 OF 10	

DFORMATS2



-001, -003

SCHEMATIC 115V - DOMESTIC



-002, -004

SCHEMATIC 230V EUROPEAN

DWG NO. 032776 REV P

PRODUCTION

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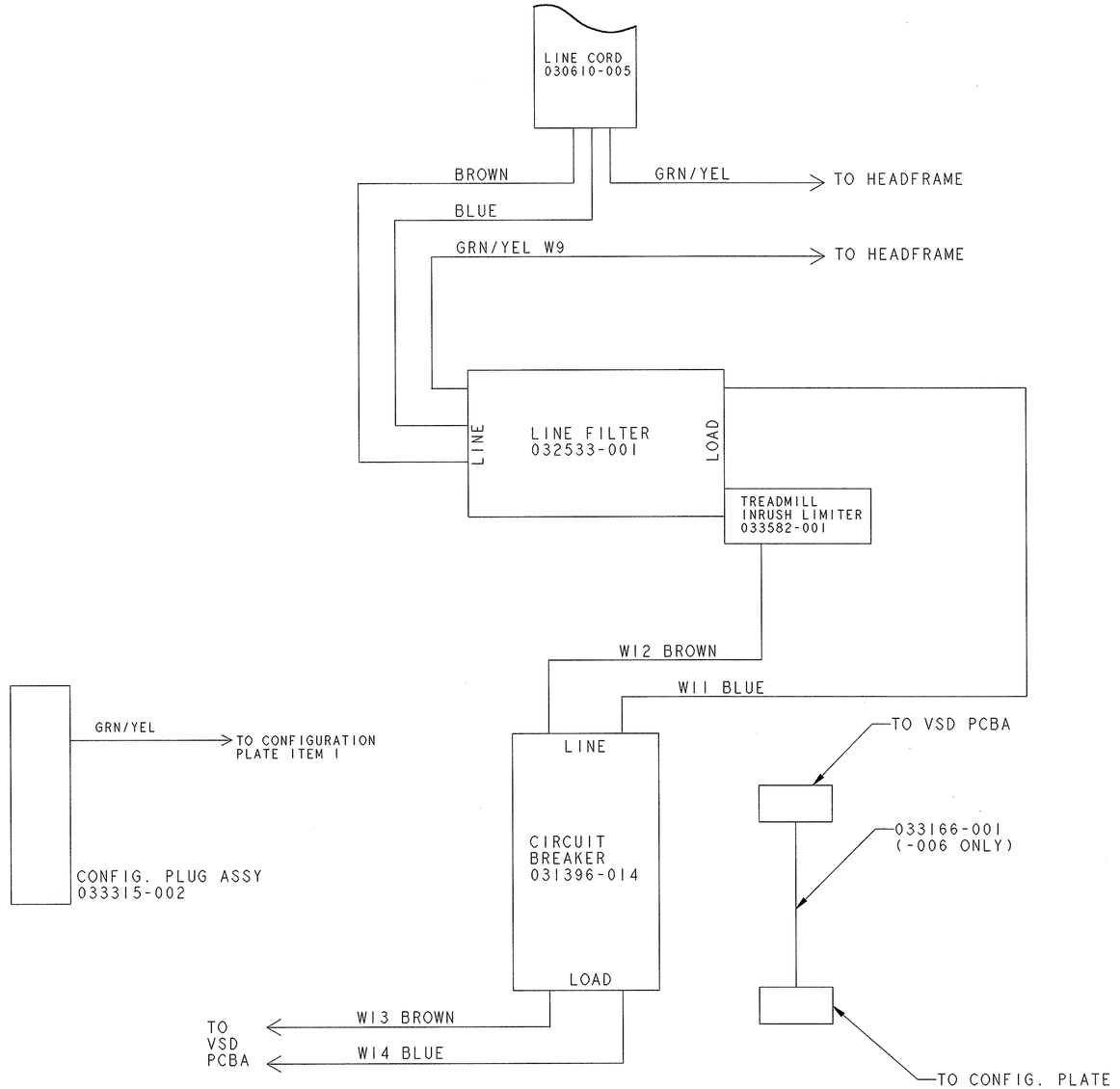
SIZE	MODEL	DWG NO.	REV
D	TREADMILL	032776	P
SCALE 1/1		SOURCE PRO	SHEET 9 OF 10

DFORMATS2



-005, -006

SCHEMATIC 230V DOMESTIC

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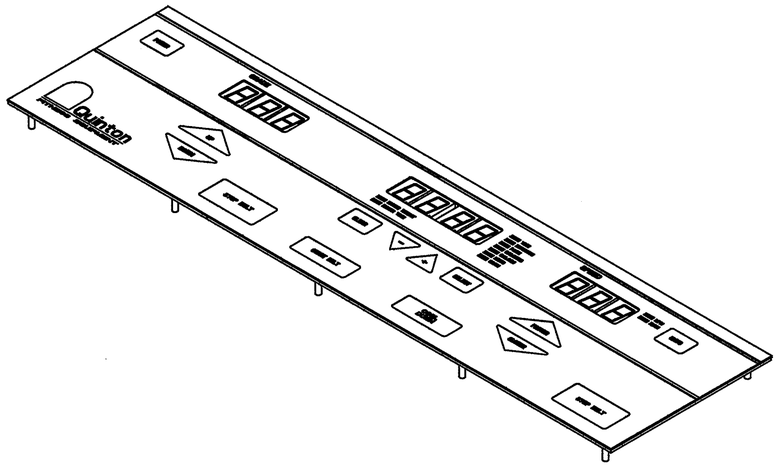
		SCALE 1/1		SOURCE PRO	SHEET 10 OF 10

DFORMATS2

NOTES:

1. APPLY ADHESIVE (ITEM 16) TO SCREW (ITEM 14) PRIOR TO ASSEMBLY.
2. CONNECT J1 (ITEM 1 THRU 12) AND J2 (ITEM 13) AS SHOWN.
3. MARK WITH PART NUMBER AND REVISION LETTER TO WHICH MANUFACTURED IN APPROXIMATE LOCATION SHOWN.

REVISIONS				
LTR	ZONE	DESCRIPTION	APPROVED	DATE
D		DCN: 38762 CP: 38761 ITEM 14 WAS: 010827-163 ACTION CODE: FI MODIFIER: DATE OF RELEASE	K. Restoule D. Thompson R. Trathen D. VanDeVeer	6-5-96 6/5/96 6/10/96 6/12/96



ITEM NUMBER	PART NUMBER	DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION
16	016891-001	ADHESIVE	LOCTITE 222	
15	006543-001	WASHER, INSULATING	.140 ID X .312 OD	
14	010827-162	SCREW, MACH, PNH, PH	6-32UNC-2A X .312 L	
13	032173-001	PCB ASSY, TREADMILL CONTROL		
12	032392-012	KEYBOARD ASSY, CONTROL	MEDTRACK, JAPANESE	
11	032392-011	KEYBOARD ASSY, CONTROL	CLUBTRACK, JAPANESE	
10	032392-010	KEYBOARD ASSY, CONTROL	MEDTRACK, SPANISH	
9	032392-009	KEYBOARD ASSY, CONTROL	CLUBTRACK, SPANISH	
8	032392-008	KEYBOARD ASSY, CONTROL	MEDTRACK, ITALIAN	
7	032392-007	KEYBOARD ASSY, CONTROL	CLUBTRACK, ITALIAN	
6	032392-006	KEYBOARD ASSY, CONTROL	MEDTRACK, FRENCH	
5	032392-005	KEYBOARD ASSY, CONTROL	CLUBTRACK, FRENCH	
4	032392-004	KEYBOARD ASSY, CONTROL	MEDTRACK, GERMAN	
3	032392-003	KEYBOARD ASSY, CONTROL	CLUBTRACK, GERMAN	
2	032392-002	KEYBOARD ASSY, CONTROL	MEDTRACK, ENGLISH	
1	032392-001	KEYBOARD ASSY, CONTROL	CLUBTRACK, ENGLISH	
	-012	PANEL, ASSY, CONTROL	MEDTRACK, JAPANESE	
	-011	PANEL, ASSY, CONTROL	CLUBTRACK, JAPANESE	
	-010	PANEL, ASSY, CONTROL	MEDTRACK, SPANISH	
	-009	PANEL, ASSY, CONTROL	CLUBTRACK, SPANISH	
	-008	PANEL, ASSY, CONTROL	MEDTRACK, ITALIAN	
	-007	PANEL, ASSY, CONTROL	CLUBTRACK, ITALIAN	
	-006	PANEL, ASSY, CONTROL	MEDTRACK, FRENCH	
	-005	PANEL, ASSY, CONTROL	CLUBTRACK, FRENCH	
	-004	PANEL, ASSY, CONTROL	MEDTRACK, GERMAN	
	-003	PANEL, ASSY, CONTROL	CLUBTRACK, GERMAN	
	-002	PANEL, ASSY, CONTROL	MEDTRACK, ENGLISH	
	-001	PANEL, ASSY, CONTROL	CLUBTRACK, ENGLISH	

PARTS LIST

-012	-011	-010	-009	-008	-007	-006	-005	-004	-003	-002	-001	QTY PER ASSEMBLY
032360	032360	032360	032360	032360	032360	032360	032360	032360	032360	032360	032360	PART NO.
000380	000377	000380	000377	000380	000377	000380	000377	000380	000377	000380	000377	NEXT ASSY NO.
												END ITEM NO.

APPLICATION

DO NOT SCALE DRAWING

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES DIMENSIONS AND TOLERANCES PER ANSY Y14.5-1982

TOL: .XX ± ---, .XXX ± ---, ANGLE ± ---

DRAWN: DERNOVSEK	10/24/94	
ENGR: D. GROME	12/8/94	
MFG: B. TRATHEN	12/8/94	
QUAL: K. Bailey	4-10-95	
COMPL: B. Nafea	4-10-95	
MKTG:		
TECH SVCE:		

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CLASS CODE: PANL | VALUE CODE: TREDML | DIST CODE: 3

Quinton instrument co.
3303 MONTE VILLA PARKWAY
BOTHELL, WA 98021-8906
206/402-2000

TITLE: PANEL, ASSEMBLY, CONTROL

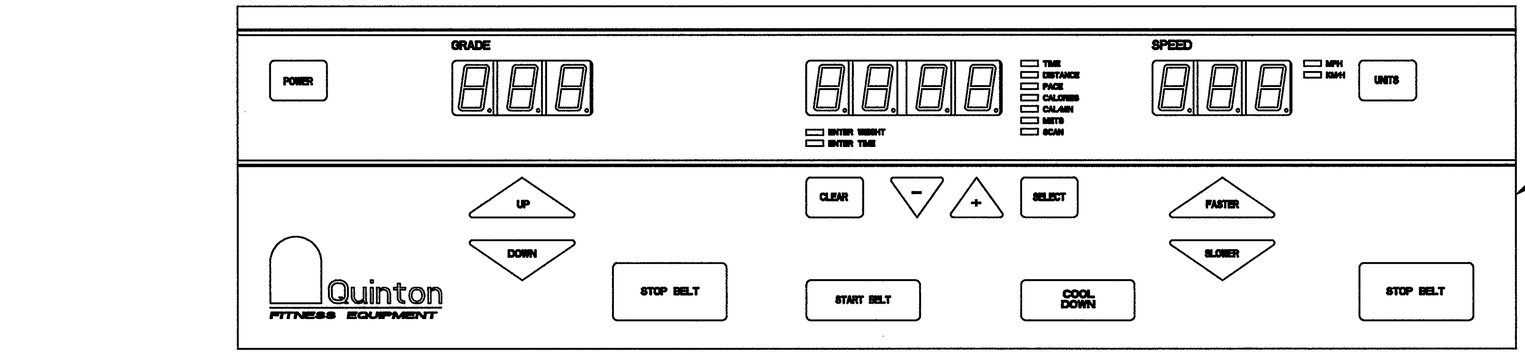
SIZE	MODEL	DWG NO.	REV
D	CLUBTRACK	032976	D

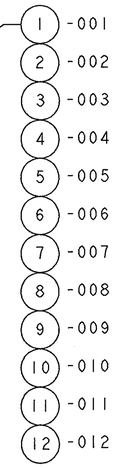
SCALE NONE | SOURCE PRO | SHEET 1 OF 2

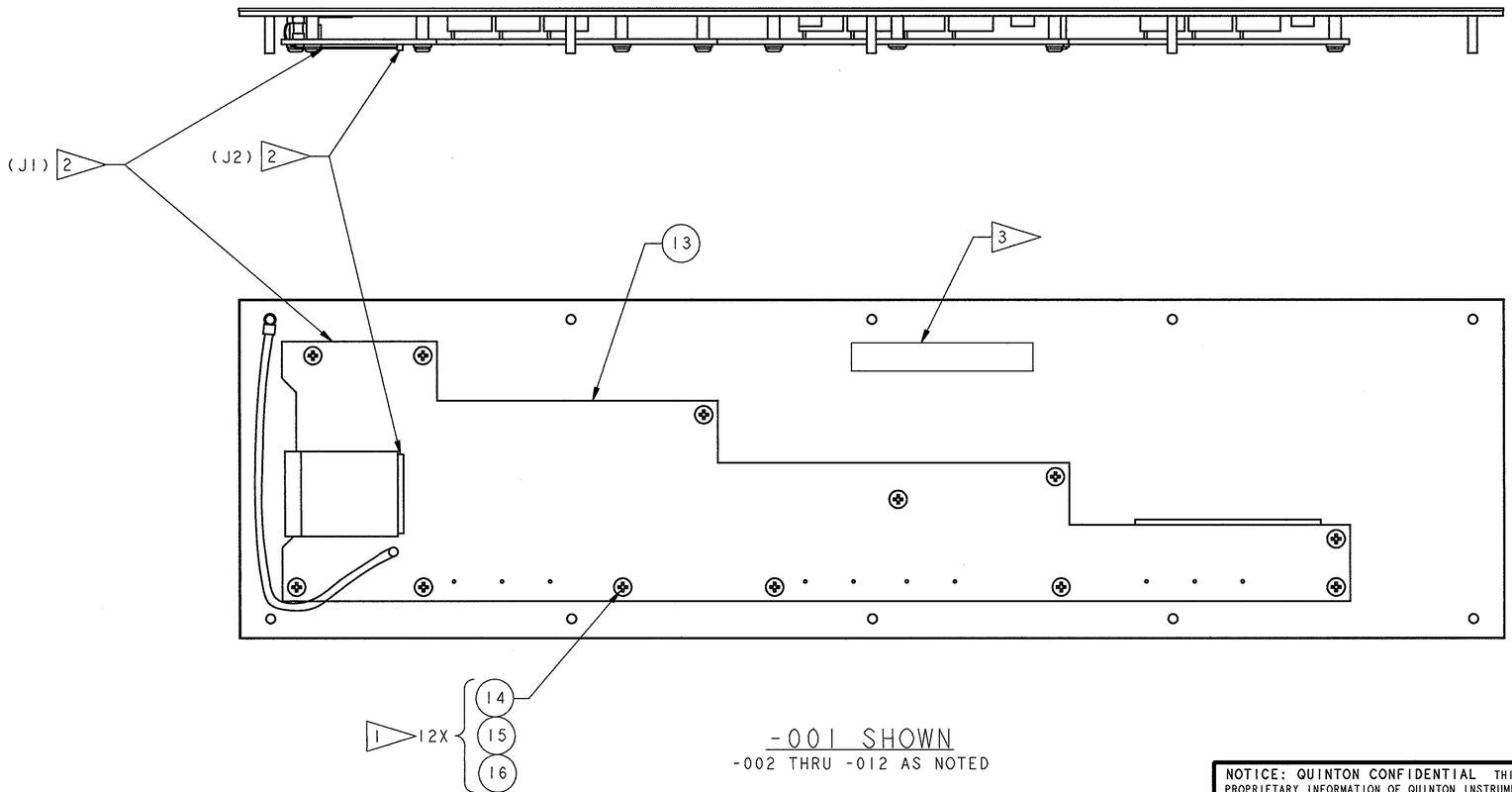
DWG NO. 032976 SH 1 REV D

PRODUCTION

031162-001B







-001 SHOWN
-002 THRU -012 AS NOTED

PRODUCTION

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SIZE	MODEL	DWG NO.	REV
D	CLUBTRACK	032976	D
SCALE NONE		SOURCE PRO	SHEET 2 OF 2

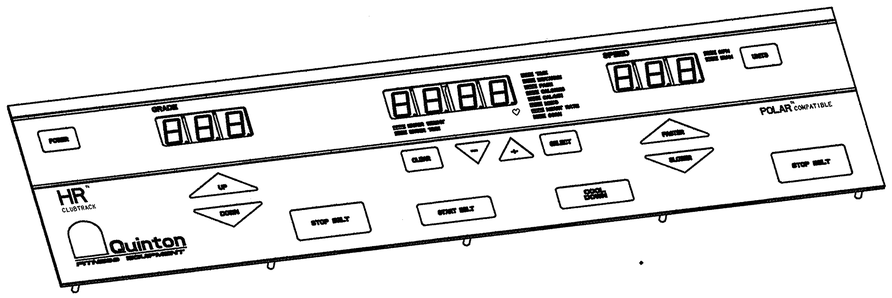
DWG NO. 032976 SH 2 REV D

031162-002A

REVISIONS				
LTR	ZONE	DESCRIPTION	APPROVED	DATE
C	2A4	DCN: 42366 CPN: 42361 REVISED FLAGNOTE 4 ITEM 12 P/N WAS: 034301-001 REVISED -001 ASSY DEPICTION TO REFLECT ABOVE CHANGES ACTION CODE: F1 MOD: DATE OF RELEASE	J.POWELL D. VanDeKreeke	6/23/97 7/25/97 7/25/97 7-25-97 7-25-97

NOTES:

1. APPLY ADHESIVE (ITEM 10) TO SCREW (ITEM 8) PRIOR TO ASSEMBLY.
2. CONNECT J1 (ITEM 1 THRU 6) AND J2 (ITEM 7) AS SHOWN.
3. MARK WITH PART NUMBER AND REVISION LETTER TO WHICH MANUFACTURED IN APPROXIMATE LOCATION SHOWN.
4. INSTALL RECEIVER ASSEMBLY (ITEM 12) WITH THE PART NO. MARKING FACING UP. ORIENT AS SHOWN.



REFERENCE VIEW

ITEM NUMBER	PART NUMBER	DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION
1	034301-002	RECEIVER ASSY,H/R CONTROL		
2	001164-001	WASHER,FLAT	#6	
AR	016891-001	ADHESIVE	LOCTITE 222	
12	006543-001	WASHER, INSULATING	.140 ID X .312 OD	
14	010827-162	SCREW, MACH, PNH, PH	6-32UNC-2A X .312 L	
1	034168-001	PCB ASSY, TREADMILL CONTROL	HEART RATE DISPLAY	
1	034230-006	KEYBOARD ASSY, CONTROL	CLUBTRACK, JAPANESE	
1	034230-005	KEYBOARD ASSY, CONTROL	CLUBTRACK, SPANISH	
1	034230-004	KEYBOARD ASSY, CONTROL	CLUBTRACK, ITALIAN	
1	034230-003	KEYBOARD ASSY, CONTROL	CLUBTRACK, FRENCH	
1	034230-002	KEYBOARD ASSY, CONTROL	CLUBTRACK, GERMAN	
1	034230-001	KEYBOARD ASSY, CONTROL	CLUBTRACK, ENGLISH	
-	-006	PANEL, ASSY, CONTROL	CLUBTRACK, JAPANESE	
-	-005	PANEL, ASSY, CONTROL	CLUBTRACK, SPANISH	
-	-004	PANEL, ASSY, CONTROL	CLUBTRACK, ITALIAN	
-	-003	PANEL, ASSY, CONTROL	CLUBTRACK, FRENCH	
-	-002	PANEL, ASSY, CONTROL	CLUBTRACK, GERMAN	
-	-001	PANEL, ASSY, CONTROL	CLUBTRACK, ENGLISH	

PARTS LIST

-006	-005	-004	-003	-002	-001
QTY PER ASSEMBLY					

DO NOT SCALE DRAWING

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES DIMENSIONS AND TOLERANCES PER ANSY Y14.5-1982

TOL .XX ± ---
.XXX ± ---
ANGLE ± ---

DRAWN: S.ERICKSON 12/21/95
ENGR: S. Erickson 2-14-96
MFG: B. Trathen 2-15-96
QUAL: R. Hadford 2-20-96
COMPL: ____
MKTG: ____
TECH SVCE: ____

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CLASS CODE: PANL | VALUE CODE: TREDML | DIST CODE: -

Quinton® instrument co.
3303 MONTE VILLA PARKWAY
BOTHELL, WA 98021-8906
425/402-2000

TITLE
CONTROL PANEL ASSEMBLY, HEART RATE DISPLAY

SIZE	MODEL	DWG NO.	REV
D	CLUBTRACK	034238	C

SCALE NONE | SOURCE PRO | SHEET 1 OF 2

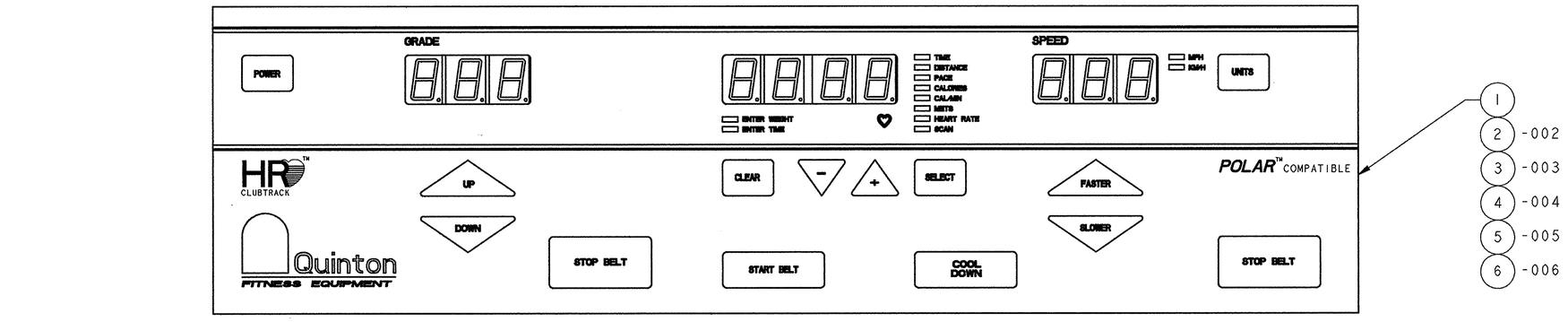
DWG NO. 034238 SH 1 REV C

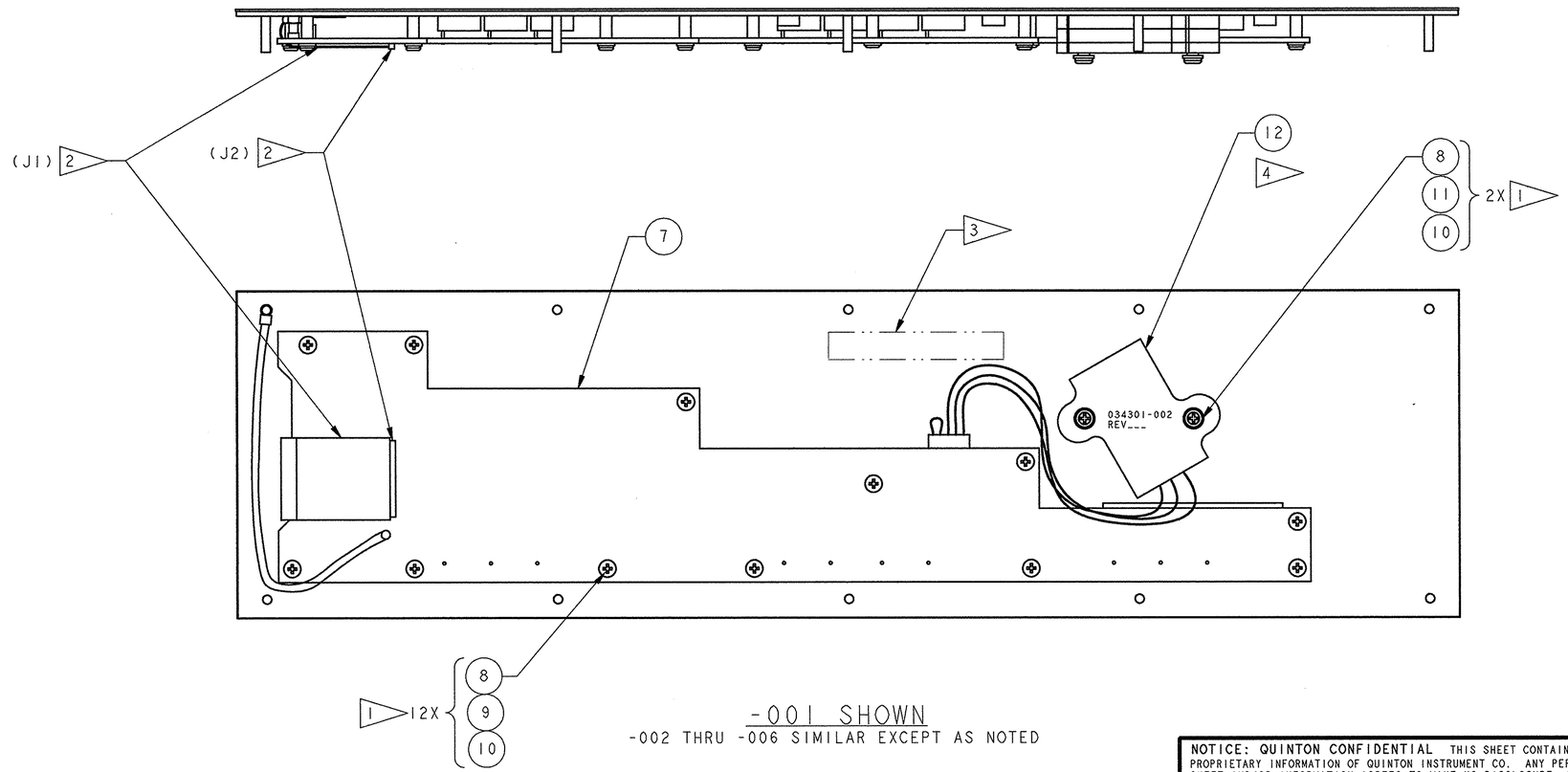
-006	-005	-004	-003	-002	-001	PART NO.	NEXT ASSY NO.	END ITEM NO.
						034237	000402	

APPLICATION

PRODUCTION

031162-001B





-001 SHOWN

-002 THRU -006 SIMILAR EXCEPT AS NOTED

PRODUCTION

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SIZE	MODEL	DWG NO.	REV
D	CLUBTRACK	034238	C
SCALE NONE	SOURCE PRO	SHEET 2 OF 2	

DWG NO. 034238 SH 2 REV C

031162-002A

NOTES: UNLESS OTHERWISE SPECIFIED

1. APPLY ADHESIVE (ITEM 10) TO SCREW (ITEM 8) PRIOR TO ASSY.
2. CONNECT J1 (ITEM 1 THRU 6) AND J2 (ITEM 7) AS SHOWN.
3. MARK WITH PART NO. & REV LTR TO WHICH MFD IN APPROX LOCATION SHOWN.
4. APPLY BUMPER (ITEM 11) TO THE BACKSIDE OF KEYBOARD ASSY (ITEM 1 THRU 6) AS SHOWN IN VIEW A–A.

REVISIONS				
LTR	ZONE	DESCRIPTION	APPROVED	DATE
A		RDA: 33955 RELEASED TO PRODUCTION ACTION CODE: H1, MOD: DATE OF RELEASE	DERNOVSEK BMT KWBeatty B. N	3/20/95 3/22/95 3/22/95 3.22.95 2 ea Ltr

ADCN NO.	34617				
REVISION LEVEL	B				

PRODUCTION

–006	–005	–004	–003	–002	–001	ITEM NUMBER	PART NUMBER	DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION
1	1	1	1	1	1	11	031465–001	BUMPER, RUBBER		
AR	AR	AR	AR	AR	AR	10	016891–001	ADHESIVE	LOCTITE 222	
8	8	8	8	8	8	9	006543–001	WASHER, INSULATING	.140 ID X .312 OD	
8	8	8	8	8	8	8	010827–162	SCREW, MACH, PH PHILLIPS	#6–32 UNC–2B X .312L	
1	1	1	1	1	1	7	030441–001	PCB ASSEMBLY	TREADMILL CONTROL	J2
1	–	–	–	–	–	6	033060–006	KEYBOARD ASSY, MOTIV. CTRL	JAPANESE	J1
–	1	–	–	–	–	5	033060–005	KEYBOARD ASSY, MOTIV. CTRL	SPANISH	J1
–	–	1	–	–	–	4	033060–004	KEYBOARD ASSY, MOTIV. CTRL	ITALIAN	J1
–	–	–	1	–	–	3	033060–003	KEYBOARD ASSY, MOTIV. CTRL	FRENCH	J1
–	–	–	–	1	–	2	033060–002	KEYBOARD ASSY, MOTIV. CTRL	GERMAN	J1
–	–	–	–	–	1	1	033060–001	KEYBOARD ASSY, MOTIV. CTRL	ENGLISH	J1
	–	–	–	–	–	–	–006	PANEL ASSY, MOTIVATIONAL CTRL	JAPANESE	
–		–	–	–	–	–	–005	PANEL ASSY, MOTIVATIONAL CTRL	SPANISH	
–	–		–	–	–	–	–004	PANEL ASSY, MOTIVATIONAL CTRL	ITALIAN	
–	–	–		–	–	–	–003	PANEL ASSY, MOTIVATIONAL CTRL	FRENCH	
–	–	–	–		–	–	–002	PANEL ASSY, MOTIVATIONAL CTRL	GERMAN	
–	–	–	–	–		–	–001	PANEL ASSY, MOTIVATIONAL CTRL	ENGLISH	

PARTS LIST

QTY PER ASSY	DO NOT SCALE DRAWING

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS ARE IN INCHES
DIMENSIONS AND TOLERANCES PER ANSI Y14.5M–1982

TOL: .XX ± ––– ; .XXX ± ––– ; ANGLE ± –––

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DRAWN:	DERNOVSEK	11/28/94	
ENGR:	D.GROME	1/18/95	
MFG:	B.TRATHEN	1/23/95	
QUAL:	KWBeatty	3.22.95	
COMPL:	B. N	22 Mar 95	
MKTG:	------	---	
TECH SVCE:	------	---	

CLASS CODE: PANL | VALUE CODE: FTM/// | DIST CODE: 3

Quinton instrument co.
3303 MONTE VILLA PARKWAY
BOTHELL, WA 98021–8906
206/402–2000

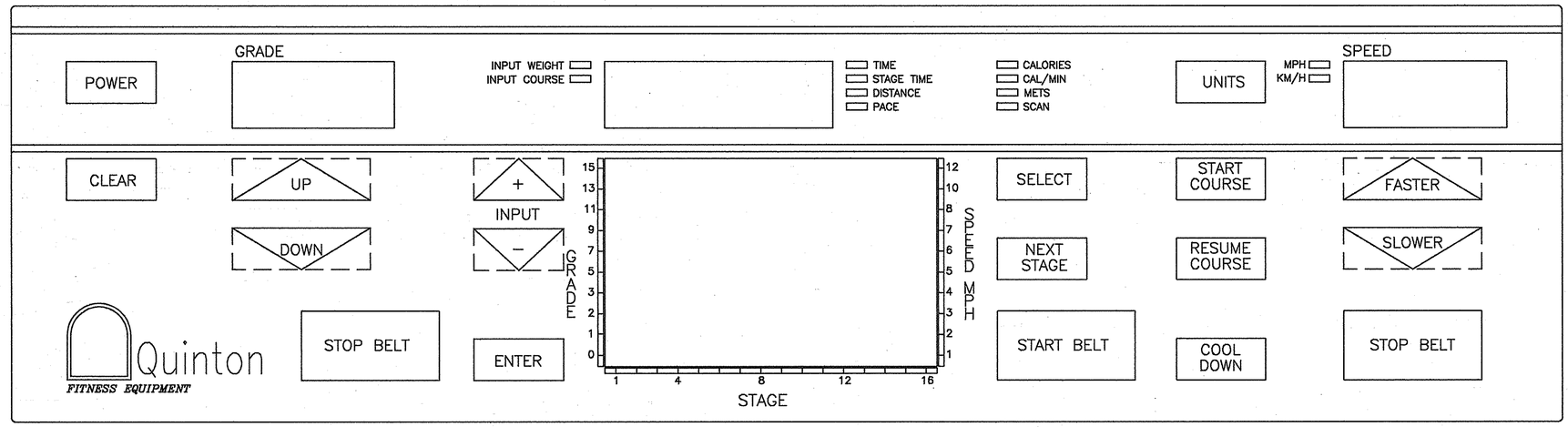
TITLE
PANEL ASSEMBLY, MOTIVATIONAL CONTROL

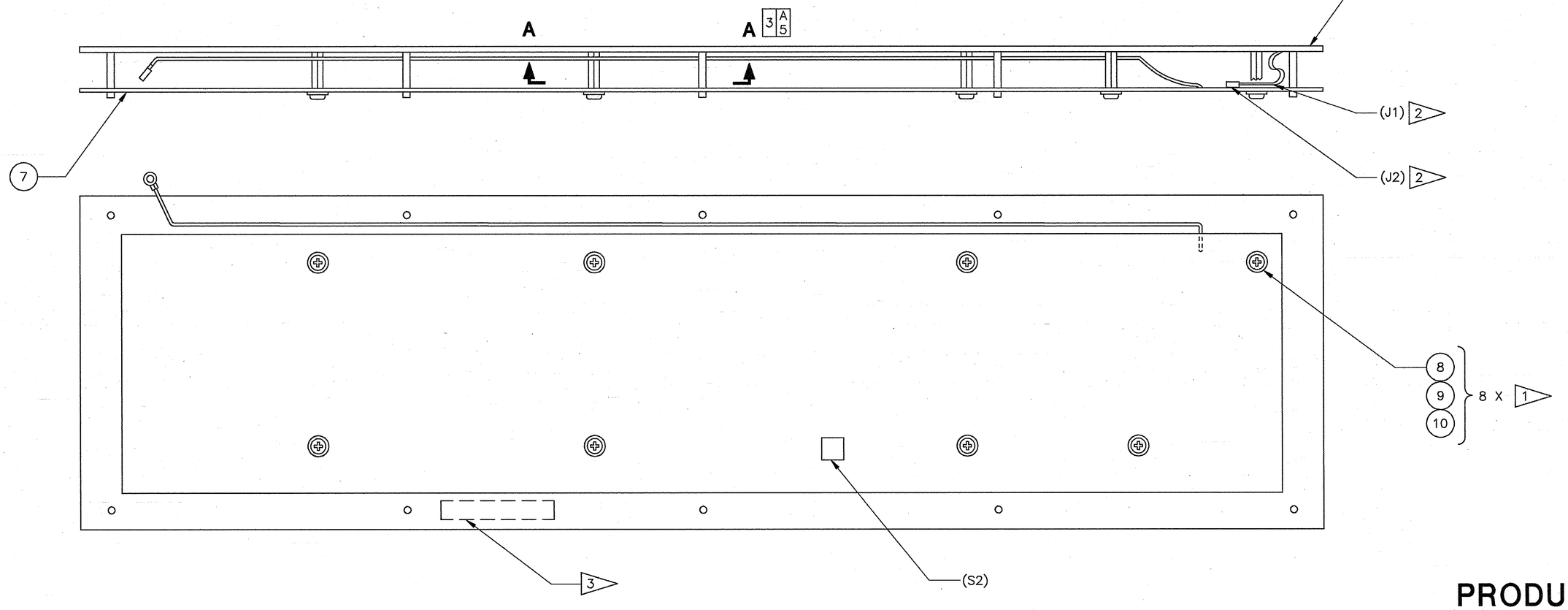
SIZE	MODEL	DWG NO.	REV
D	CLUBTRK	033046	A
SCALE NONE		SOURCE AUTOCAD	SHEET 1 OF 3

DWG NO. 033046 SH 1 REV A

–006 THRU –001	032360	000382
PART NO.	NEXT ASSY NO.	END ITEM NO.
APPLICATION		

031162–001C





PRODUCTION

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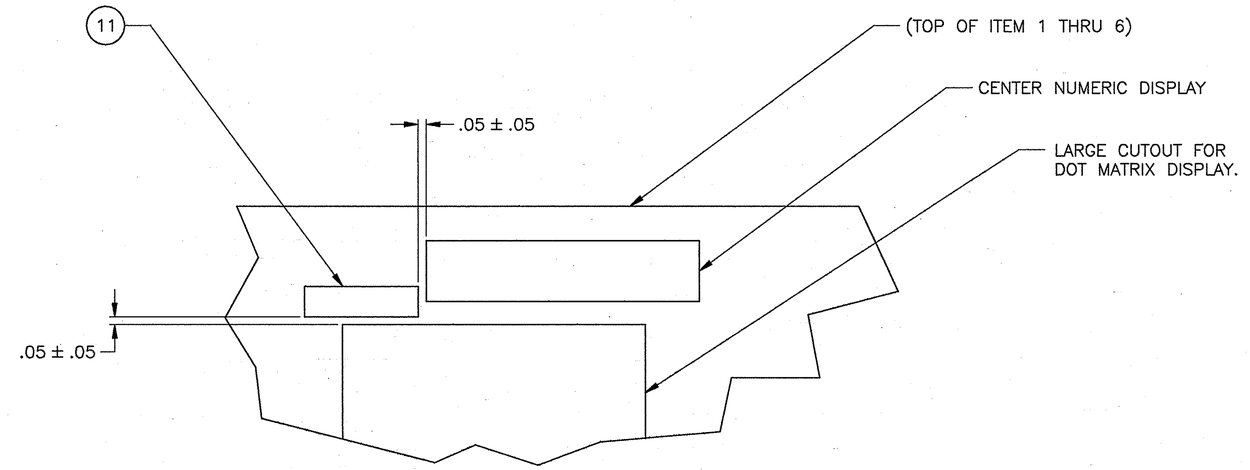
SIZE	MODEL	DWG NO.	REV
D	CLUBTRACK	033046	A
SCALE NONE		SOURCE AUTOCAD	SHEET 2 OF 3

DWG NO. 033046 SH 2 REV A

031162–002B



VIEW **A-A** 2 C 4

PRODUCTION

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SIZE	MODEL	DWG NO.	REV
D	CLUBTRACK	033046	A
SCALE NONE		SOURCE AUTOCAD	SHEET 3 OF 3

DWG NO. 033046 SH 3 REV A

031162-002A

REVISIONS				
LTR	ZONE	DESCRIPTION	APPROVED	DATE
D		CPN: 44203 DCN: 44204 ITEM 7 P/N WAS; 035452-001 (PCBA, TREADMILL CONTROL) ACTION CODE: F1, MOD: DATE OF RELEASE		1/30/98 1/30/98 1/30/98 1/30/98

NOTES:

1. APPLY ADHESIVE (ITEM 18) TO SCREW (ITEM 12, 19 AND 20) PRIOR TO ASSEMBLY.
2. CONNECT J1 (ITEM 1 THRU 6) AND J2 (ITEM 7) AS SHOWN.
3. DELETED.
4. INSTALL RECIEVER ASSEMBLY (ITEM 11) WITH THE PART NUMBER MARKING FACING UP. ORIENT AS SHOWN.

-006	-005	-004	-003	-002	-001	ITEM NUMBER	PART NUMBER	DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION
6	6	6	6	6	6	21	016048-024	WASHER, FLAT, NYLON	.257 I.D. X .093 THK	
2	2	2	2	2	2	20	010827-242	SCREW, MACH, PNH, PH	6-32UNC-2A X .750L	
4	4	4	4	4	4	19	030579-008	SCREW, MACH, PHP, SEMS	6-32 X .313	
A/R	A/R	A/R	A/R	A/R	A/R	18	016891-001	ADHESIVE	LOCTITE 222	
2	2	2	2	2	2	17	001164-001	WASHER,FLAT	#6	
6	6	6	6	6	6	16	006543-001	WASHER,INSULATING	.140 ID X .312 OD	
2	2	2	2	2	2	15	030578-002	NUT,KEP,HEX,CONICAL WASHER	#6	
						14	DELETED			
4	4	4	4	4	4	13	030579-002	SCREW,MACH,PNH,PH,SEMS	4-40UNC-2A X .250 L	
6	6	6	6	6	6	12	010827-162	SCREW,MACH,PNH,PH	6-32UNC-2A X .312 L	
1	1	1	1	1	1	11	034301-002	RECEIVER ASSY,HR CONTROL		
1	1	1	1	1	1	10	034719-001	OPTICAL FILTER,CONTROL PANEL	LCD WINDOW	
1	1	1	1	1	1	9	034691-001	BRACKET,LCD MOUNTING		
1	1	1	1	1	1	8	035386-001	ASSY,LIQUID CRYSTAL DISPLAY		
1	1	1	1	1	1	7	035662-001	PCBA,HERCULES CONTROL	HR CONTROLLER	
1	-	-	-	-	-	6	034667-006	KEYPANEL ASSY,HR CONTROLLER	JAPANESE	
-	1	-	-	-	-	5	034667-005	KEYPANEL ASSY,HR CONTROLLER	SPANISH	
-	-	1	-	-	-	4	034667-004	KEYPANEL ASSY,HR CONTROLLER	ITALIAN	
-	-	-	1	-	-	3	034667-003	KEYPANEL ASSY,HR CONTROLLER	FRENCH	
-	-	-	-	1	-	2	034667-002	KEYPANEL ASSY,HR CONTROLLER	GERMAN	
-	-	-	-	-	1	1	034667-001	KEYPANEL ASSY,HR CONTROLLER	ENGLISH	
	-	-	-	-	-	-	-006	CONTROL ASSY,HR CONTROLLER	JAPANESE	
-		-	-	-	-	-	-005	CONTROL ASSY,HR CONTROLLER	SPANISH	
-	-		-	-	-	-	-004	CONTROL ASSY,HR CONTROLLER	ITALIAN	
-	-	-		-	-	-	-003	CONTROL ASSY,HR CONTROLLER	FRENCH	
-	-	-	-		-	-	-002	CONTROL ASSY,HR CONTROLLER	GERMAN	
-	-	-	-	-		-	-001	CONTROL ASSY,HR CONTROLLER	ENGLISH	

PARTS LIST

NOTE:

PROTOTYPE DASH NUMBERS INDICATED BELOW HAVE BEEN ADDED TO THIS DRAWING.

-003 -004 -006

PRODUCTION

ALL	034665	000425
PART NO.	NEXT ASSY NO.	END ITEM NO.
APPLICATION		

QTY PER ASSEMBLY | DO NOT SCALE DRAWING

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES DIMENSIONS AND TOLERANCES PER ANSY Y14.5-1982

TOL .XX ± --- .XXX ± --- ANGLE ±

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CLASS CODE: ASSY | VALUE CODE: TREDML | DIST CODE: -

DRAWN: S.ERICKSON	11/13/96	
ENGR: S.ERICKSON	03/04/97	
MFG ENGR: B.TRATHEN	03/10/97	
QUAL ENGR: D.VANDEVENTER	03/10/97	
COMPL ENGR:		
REG AFFAIRS:		
OTHER:		

Quinton® instrument co.
3303 MONTE VILLA PARKWAY
BOTHELL, WA 98021-8906
425/402-2000

TITLE

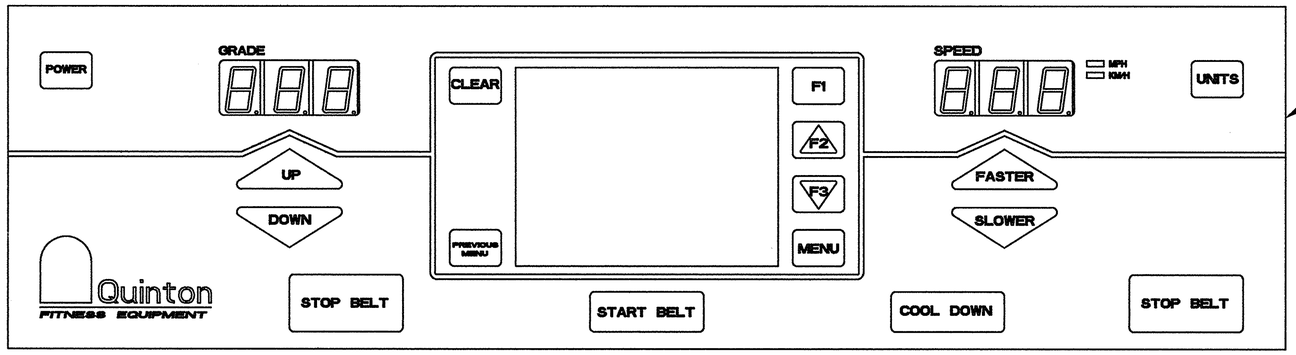
CONTROL ASSEMBLY, HEART RATE CONTROLLER

SIZE	MODEL	DWG NO.	REV
D	TREDML	034664	D

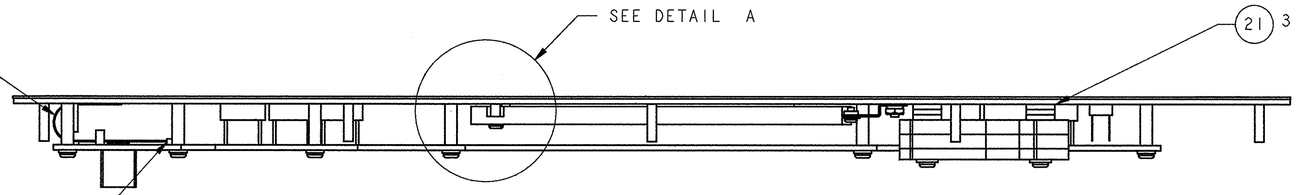
SCALE NONE | SOURCE PRO | SHEET 1 OF 2

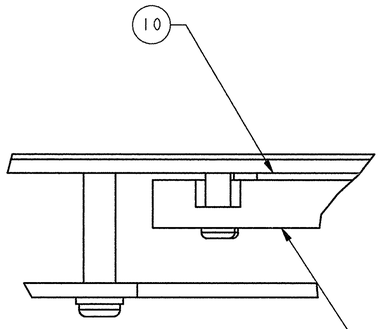
DWG NO. 034664 REV D

031162-001B

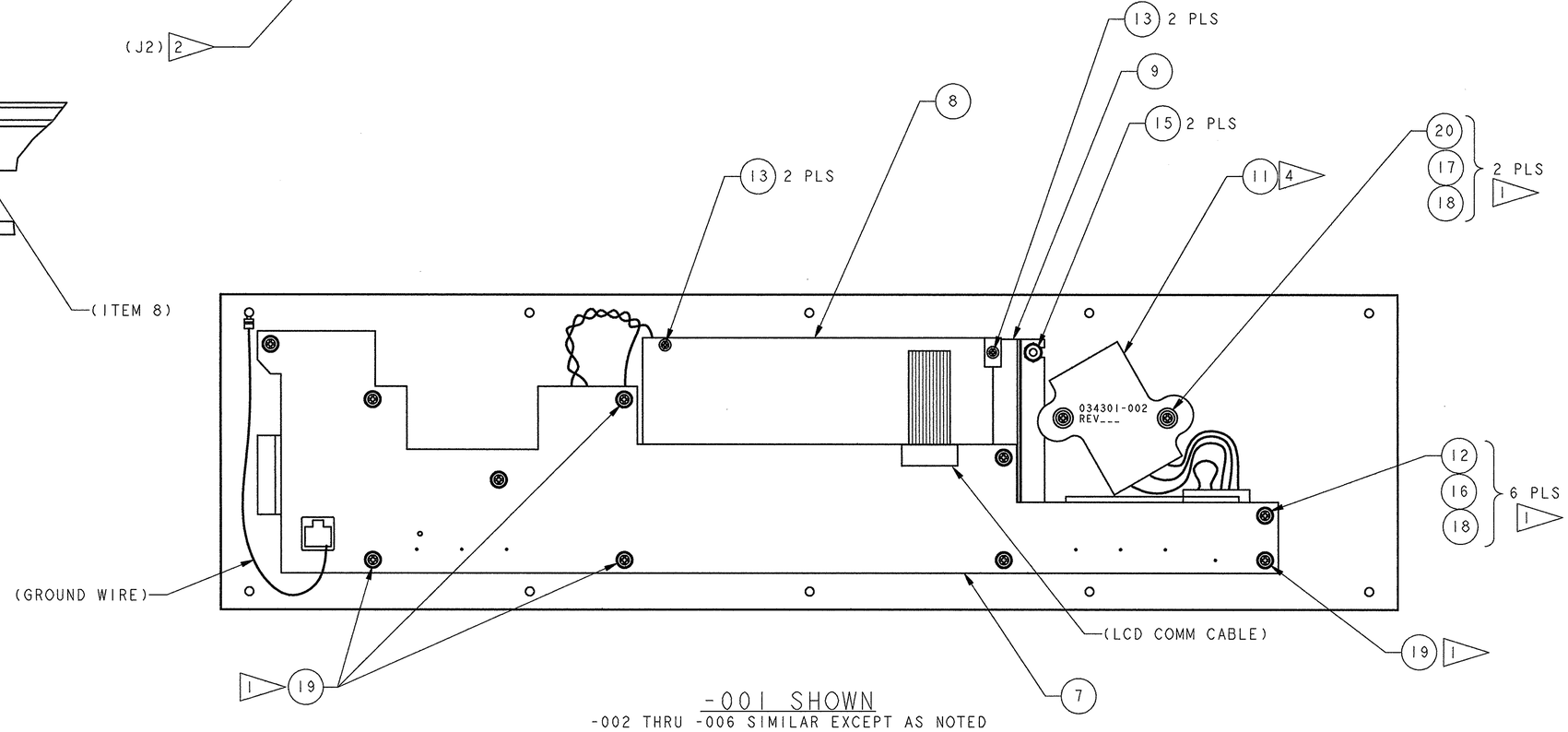


1
2 -002
3 -003
4 -004
5 -005
6 -006





DETAIL A
SCALE 2X



-001 SHOWN
-002 THRU -006 SIMILAR EXCEPT AS NOTED

PRODUCTION

DWG NO. 034664 SH 2 REV D

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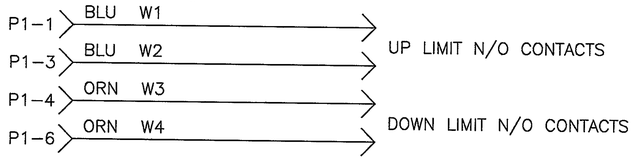
SIZE	MODEL	DWG NO.	REV
D	TREDML	034664	D
SCALE NONE		SOURCE PRO	SHEET 2 OF 2

031162-002A

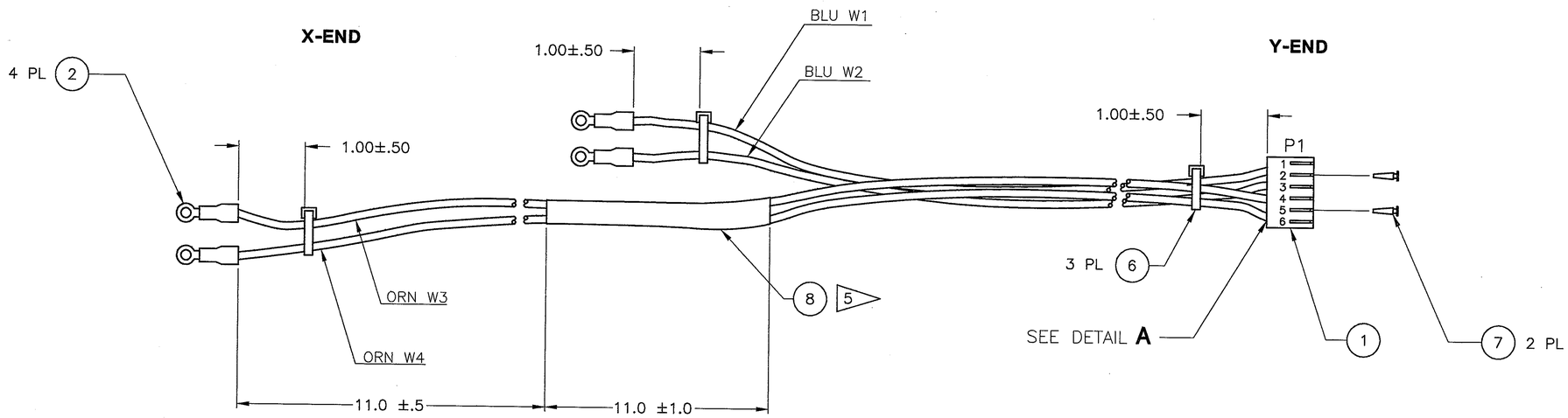
NOTES: UNLESS OTHERWISE SPECIFIED

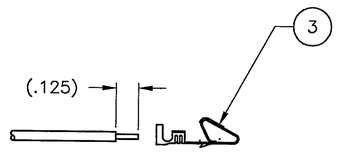
1. ASSEMBLE WIRE HARNESS PER QUINTON WORKMANSHIP STANDARDS MANUAL, P/N 018124.
2. DO NOT TWIST WIRES.
3. P/N 011582-101 IS AN ACCEPTABLE ALTERNATE.
4. MARK WITH PART NUMBER AND REV LETTER TO WHICH MANUFACTURED.
5. SHRINK EACH END OF TUBING (ITEM 8), 2 INCHES MIN.



SCHEMATIC DIAGRAM

REVISIONS				
LTR	ZONE	DESCRIPTION	APPROVED	DATE
D		B: ADCN 35026		
	1B7	DIM 11 ±.5 WAS; 14 ±.5		
	1B6	DIM 11 ±1 WAS; 8 ±1		
		ACTION CODE: E1, MODIFIER: 6/8/95		
		C: ADCN 35500		
		ITEM 4 WAS; 010605-007		
		ITEM 5 WAS; 010605-004		
		ITEM 8 WAS; 018179-007		
		ACTION CODE: E1, MODIFIER: 7/18/95		
		CPN: 37514		
		D: DCN 37515		
		REVISED TO CURRENT DRAFTING STD'S		
		ADDED FLAG NOTE 5		
	1B7	DIM 11.0 ±.5 WAS; 11 ±.5		
	1B6	DIM 11.0 ±1.0 WAS; 11 ±1		
		REMOVED "P/N 015124" FROM NOTE 1		
		ACTION CODE: F1, MOD: DATE OF RELEASE		





DETAIL **A**
4 PLACES

WIRE TABLE					X-END		Y-END	
ITEM	WIRE	GAUGE	LENGTH	COLOR	STRIP	ITEM	STRIP	ITEM
4	W1	18	12.0±.5	BLU	.28 +.04 -.00	2	.125 +.040 -.000	3
4	W2	18	12.0±.5	BLU	.28 +.04 -.00	2	.125 +.040 -.000	3
5	W3	18	42.0±.5	ORN	.28 +.04 -.00	2	.125 +.040 -.000	3
5	W4	18	42.0±.5	ORN	.28 +.04 -.00	2	.125 +.040 -.000	3

PRODUCTION

	AR	8	018179-006	TUBING, HEAT SHRINKABLE	FIT-221V-1/4	
	2	7	007929-001	KEY, POLARIZING		
	3	6	001899-001	CABLE TIE		
	AR	5	012753-003	WIRE, INSULATED, STRANDED	18 AWG, 300V, ORANGE	W3, W4
	AR	4	012753-010	WIRE, INSULATED, STRANDED	18 AWG, 300V, BLUE	W1, W2
3	4	3	011582-111	CONNECTOR, CRIMP TERMINAL	CONTACT	
	4	2	030690-006	TERMINAL, RING TONGUE	#6, RED	
	1	1	011582-006	CONNECTOR, CRIMP TERMINAL	HOUSING	
		–	-001	HARNESS ASSY, LIMIT SWITCH		

PARTS LIST

-001 ITEM NUMBER	PART NUMBER	DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION

PART NO.	NEXT ASSY NO.	END ITEM NO.
-001	032359	000383 000382 000380 000379 000378 000377
APPLICATION		

031162-001C

QTY PER ASSY | DO NOT SCALE DRAWING

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS ARE IN INCHES
DIMENSIONS AND TOLERANCES
PER ANSI Y14.5M-1982

TOL: .XX ± ---, .XXX ± ---, ANGLE ± ---

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DRAWN:	R. P-CANNON	12-19-94
ENGR:	V.PIPINICH	1/12/95
MFG:	S.CURRAN	1/18/95
QUAL:	K. BAILEY	4/4/95
COMPL:	S.CURRAN	4/5/95
MKTG:	———	
TECH SVCE:	———	

CLASS CODE: SWIA | VALUE CODE: ////// | DIST CODE: 3

Quinton® instrument co.
3303 MONTE VILLA PARKWAY
BOTHELL, WA 98021-8906
206/402-2000

TITLE
HARNESS ASSEMBLY, LIMIT SWITCH

SIZE	MODEL	DWG NO.	REV
D	TREDML	033170	D
SCALE NONE	SOURCE AUTOCAD	SHEET 1 OF 1	

DWG NO. 033170 SH 1 REV D

NOTES:

1. MATERIAL TO BE SUPPLIED BY VENDOR.
2. ALL PARTS PER DRAWING RECOMMENDATION.
3. PERMANENTLY MARK MOTOR WITH STAIRMASTER PART NUMBER, DASH NUMBER AND, REVISION LETTER TO WHICH MANUFACTURED AND VENDOR IDENTIFICATION.
4. THIS COMPONENT MUST BE CERTIFIED BY A RECOGNIZED TESTING AGENCY TO COMPLY WITH APPROPRIATE CSA AND UL STANDARDS.
5. DELETED
6. TWO EXTRA NEMA STANDARD MOUNTING HOLES OPTIONAL.
7. USE SEALED BALL BEARINGS IN MOTOR CONSTRUCTION. THERE ARE TO BE NO EXTERNAL GREASE FITTINGS ON MOTOR CASE.
8. WITH ORDER OF PHASING, BLK(0), GRN (120), WHT (240) MOTOR ROTATION SHALL BE COUNTERCLOCKWISE WHEN VIEWED FROM OUTPUT SHAFT END.
9. POWER CORD (ITEM 4) TO EXTEND OUT BOTTOM SIDE OF JUNCTION BOX (ITEM 2) SOURCE 2 ONLY, LENGTH DIMENSION TO BE MEASURED FROM SURFACE OF JUNCTION BOX TO END OF CONNECTOR (ITEM 3), PER TABLE 1.
10. DELETED
11. ADD LABEL (ITEM 7) IN APPROXIMATE LOCATION SHOWN.
12. "X" IS A NON-SIGNIFICANT INTEGER AND MAY NOT BE PRESENT
13. DELETED
14. ITEM SHALL BE SUITABLY PACKAGED FOR ACCEPTANCE BY COMMON CARRIER FOR SURFACE TRANSPORTATION, HANDLING, AND STORAGE WITHOUT DETRIMENTAL EFFECTS TO THE ITEM.

ONLY THE ITEMS DESCRIBED ON THIS DRAWING WHEN PROCURED FROM THE VENDOR(S) LISTED HEREON IS APPROVED BY THE STAIRMASTER DESIGN ENGINEERING DEPARTMENT IN THE APPLICATIONS SPECIFIED BY THIS DOCUMENT NUMBER. SUBSTITUTE ITEMS SHALL NOT BE USED.

UNIT OF MEASURE: EACH

DELETED (3)
BALDOR ELEC CO. FORT SMITH, AR (2)
DELETED (1)
APPROVED SOURCE(S) OF SUPPLY

REVISIONS				
LTR	ZONE	DESCRIPTION	APPROVED	DATE
P		RDA: 10101	M. GURR	07/26/01
		DELETED MFG/SOURCE 3 EMERSON MOTORS		8/24/01
		DELETED FLAGNOTE 13		8/20/01
		ADDED NOTE 14	D. VanDeVenter	8-30-01
	2D7 2D3	DIM 12.30 MOTOR OVERALL LENGTH WAS; 13.31 DIM 6.62 MOTOR DIAMETER WAS; 6.63		
		ACTION CODE: H1, MOD: DATE OF RELEASE		

MOTOR SPECIFICATIONS:

HP: 2
NEMA FRAME: 145T
RPM: 1740
PHASE: 3
FREQUENCY: 60 HZ
PWM SWITCHING FREQUENCY: 12.5 KHZ
VOLTAGE: 200 V
MOTOR TYPE: AC

MAX FULL LOAD AMPS: 6.2 A
SERVICE FACTOR: 1.00 MINIMUM
PROTECTOR: NONE
AMBIENT: 50°C CONTINUOUS
DUTY CYCLE: 100% AT 2 HP
INSULATION CLASS: H"X" 12
ATTACH WIRE INSULATION CLASS: F
WINDING: MFG CODE 1 - DELETED
MFG CODE 2 - 35Y211
DOUBLE DIP BAKED
EXTRA PHASE PAPER

TABLE 1	
DASH NO.	DIM "L" SOURCE 2
-001	29.75 ±.75
-003	

-004	MARKET	MARKET
-003	035602	000448
-002	MARKET	MARKET
-001	032359	000390 000383 000382 000380 000378 000377
PART NO.	NEXT ASSY NO.	END ITEM NO.
APPLICATION		

-003	MOTOR ASSY, DRIVE, AC VARIABLE	3	DELETED
		2	35Q559Y211G1
-001		2	35M825Y211G1
		1	DELETED
DASH NO.	DESCRIPTION	MFG CODE	MFG PART NO.

SOURCE CONTROL DRAWING

-004	-003	-002	-001	ITEM NUMBER	PART NUMBER	DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION
1	-	1	-	8	1	CONTAINER, SHIPPING		
1	-	1	-	7	016222-003	LABEL, CAUTION		
-	3	-	3	6		TERM, SOLDERLESS, CLE SPLC	18-10 AWG	
-	1	-	1	5		STRAIN RELIEF		
-	AR	-	AR	4	1	POWER CORD	16 AWG SJT INSULATION	
-	3	-	3	3		QD TERMINAL, .25	FULLY INSUL, DBL CRIMP	
-	1	-	1	2		JUNCTION BOX		
-	1	-	1	1		DRIVE MOTOR	PER SPEC	
	-	-	-	-	-004	MOTOR ASSY, DRIVE, AC VARIABLE	SPARES	
1		-	-	-	-003	MOTOR ASSY, DRIVE, AC VARIABLE		
-	-		-	-	-002	MOTOR ASSY, DRIVE, AC VARIABLE	SPARES	
-	-	1		-	-001	MOTOR ASSY, DRIVE, AC VARIABLE		

4

PARTS LIST

QTY PER ASSEMBLY | DO NOT SCALE DRAWING

TOL: .X ± 0.1, .XX ± 0.01, .XXX ± 0.005 | ANGLE: BENT ± 2°, MACHINED ± 0.5°

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES
DIMENSIONS AND TOLERANCES PER ANSI Y14.5-1982

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DRAWN:	M. DERNOVSEK	11/5/94
ENGR:	S. DECKERS	12/1/94
MFG:	B. TRATHEN	12/2/94
QUAL:	K. BAILEY	12/22/94
COMPL:	B. NAFEA	6/15/95
MKTG:	-----	-----
TECH SVCE:	-----	-----

StairMaster® SPORTS/MEDICAL PRODUCTS, INC.

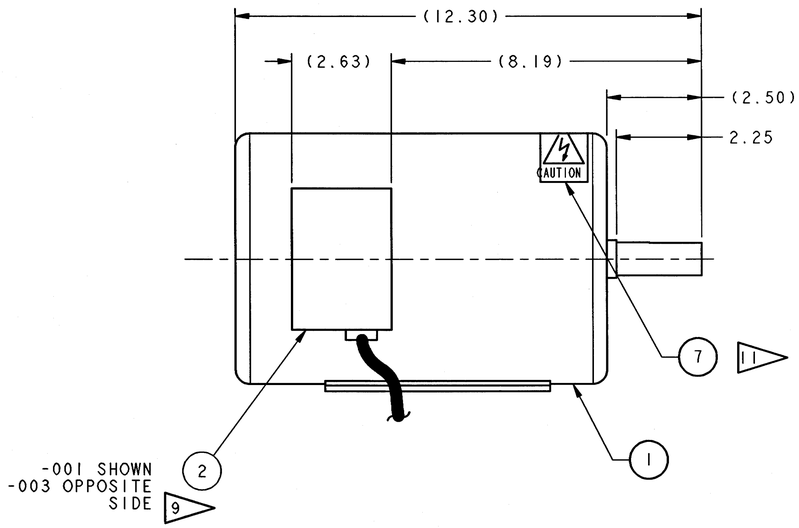
TITLE
MOTOR ASSEMBLY, DRIVE, AC VARIABLE

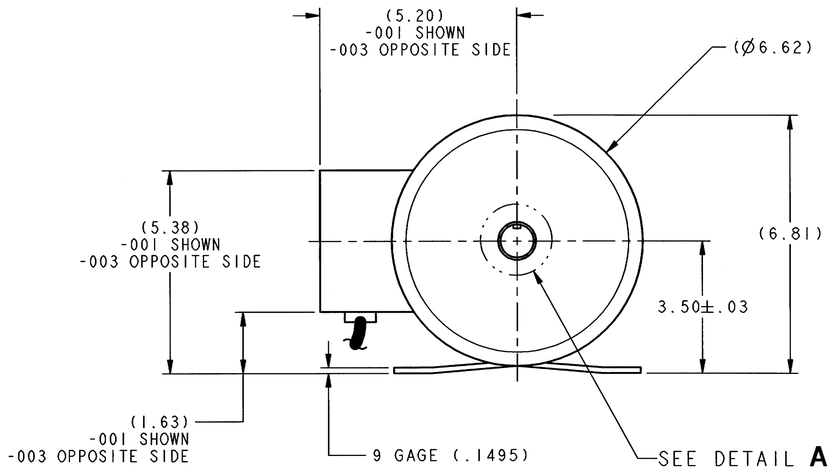
SIZE	MODEL	DWG NO.	REV
D	TREDML	032783	P
SCALE 1/2	SOURCE PRO	SHEET 1 OF 2	

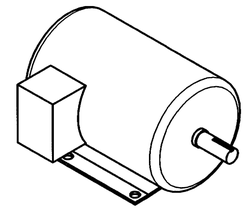
DWG NO. 032783 SH 1 REV P

PRODUCTION
DRAWING RELEASE STATUS

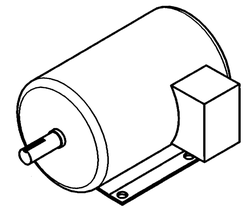
DFORMATS-A SHT1



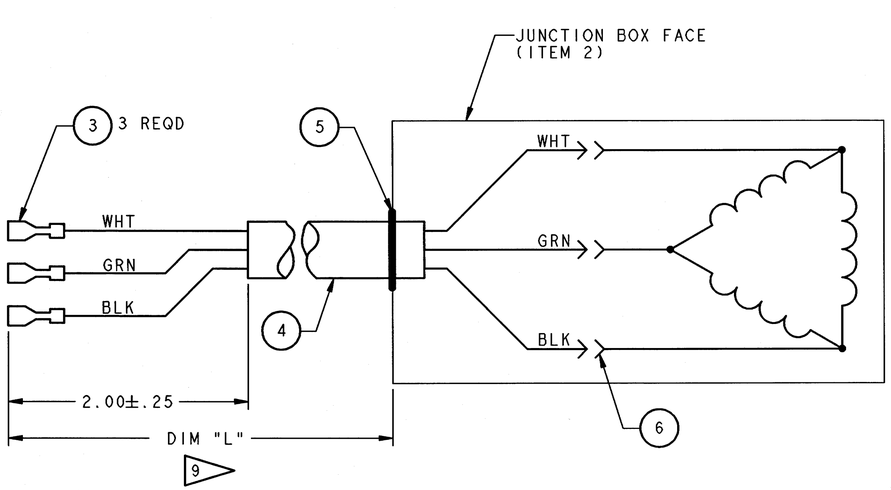




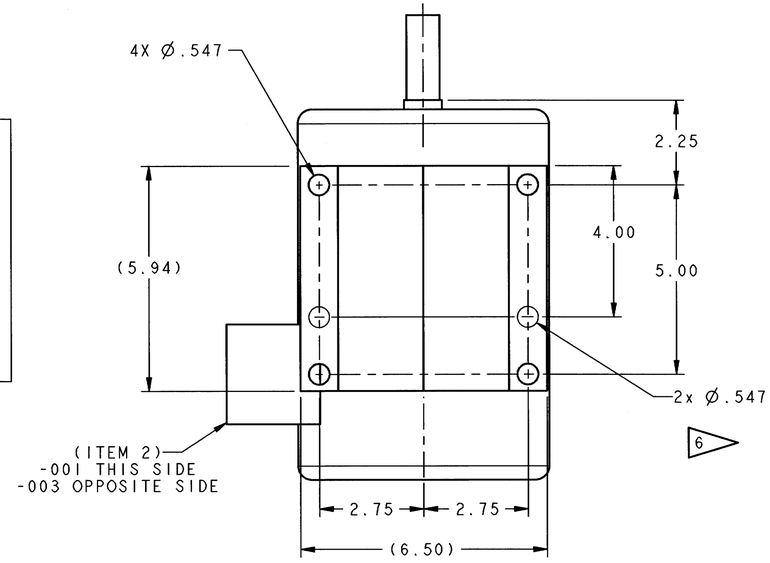
(-001 DEPICTION ONLY)

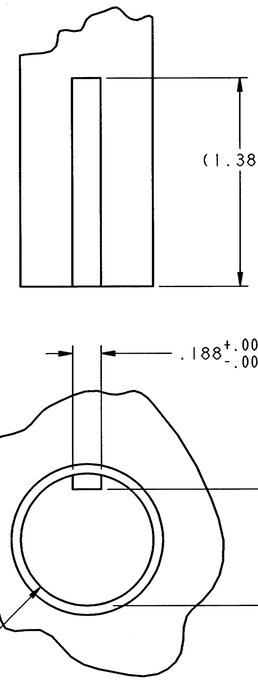


(-003 DEPICTION ONLY)



SCHEMATIC & WIRING DIAGRAM
-001 AND -003





DETAIL A
SCALE 2/1

-001 SHOWN
-003 NOTED

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		SCALE 1/2	SOURCE PRO	SHEET 2 OF 2	

DWG NO. 032783 SH 2 REV P

DFORMAT.SZ

NOTES:

1. ASSEMBLE PER QUINTON WORKMANSHIP STANDARDS AND PROCEDURES.
2. PRESS BRONZE BEARING (ITEM 22) INTO THE MACHINED HEADFRAME (ITEM 1) PRIOR TO ASSEMBLY. REAM TO FIT AS REQUIRED.
3. SEE SHEETS 8 THRU 10 FOR WIRE ROUTING. WIRES MUST NOT BE SUBJECT TO PINCHING OR ABRASION; ROUTE AWAY FROM MOVING PARTS AND SHARP EDGES.
4. USE ADHESIVE (ITEM 67) ON ALL FASTENERS WITHOUT LOCKING HARDWARE EXCEPT WHERE NOTED.
5. SEE NEXT LEVEL ASSEMBLY FOR ALIGNMENT AND TORQUE SPECIFICATIONS ON THE FLYWHEEL/PULLEY (ITEMS 5,6,7) AND TENSIONER (ITEM 8). DO NOT TIGHTEN OR APPLY THREAD ADHESIVE TO FLYWHEEL SET SCREWS (ITEM 47) UNTIL NEXT LEVEL ASSEMBLY.
6. TIGHTEN NUT (ITEM 51) UNTIL SPLIT LOCKWASHER (ITEM 63) COMPRESSES FLAT, THEN FURTHER TIGHTEN NUT (ITEM 51) 1/2 TURN. USE THREAD ADHESIVE (ITEM 83) ON THESE PREASSEMBLED FASTENERS.
7. JAM NUT AND INTERNAL STAR LOCK WASHER ARE PART OF ITEM 31.
8. ASSEMBLY TORQUE: 46±4 FT-LBS.
9. INSTALL SIL PAD (ITEM 72) WITH ADHESIVE SIDE ON HEADFRAME, CENTERED BETWEEN MOUNTING HOLES.
10. DELETED.
11. CABLE TIES (ITEM 68) USED ON ALL CABLE MOUNTS (ITEM 69) AND AS NEEDED ON CABLE BUNDLES.
12. INSTALL WIRES IN GRADE POT ASSEMBLY CONNECTOR AS INDICATED.
13. GREASE RACK GEAR AND HEADFRAME SLOTS WITH ITEM 74.
14. LOCATE LABEL (ITEM 75) APPROXIMATELY AS SHOWN.
15. LOCATE LABEL (ITEM 76) DIRECTLY UNDER POWER GROUND SCREW AS SHOWN.
16. ALTERNATE TENSIONING OF BOTH BOLTS (ITEM 44) UNTIL SPLIT LOCKWASHER (ITEM 62) IS FLAT.
17. ALTERNATE RIVET: 006769-001.
18. P/N 040049-001 IS AN ACCEPTABLE ALTERNATE.

REVISIONS				
LTR	ZONE	DESCRIPTION	APPROVED	DATE
W		RDA: 10166 ADDED FLAGNOTE 18 ACTION CODE: F1, MOD: DATE OF RELEASE	M. GURR T. BROWN D. Hackett	12/13/01 1/3/02 1/7/02 1/9/02

PARTS LIST CONTINUED ON SHEET 2

-012	-011	-010	-009	-008	-007	-006	-005	-004	-003	-002	-001	ITEM NUMBER	PART NUMBER	DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION
1	1	-	-	1	1	1	1	-	-	-	-	16	033167-001	ASSEMBLY, HARNESS, BRS		
1	1	1	1	1	1	1	1	1	1	1	1	15	032706-001	TRANSFORMER ASSEMBLY		
1	1	1	1	1	1	1	1	1	1	1	1	14	034632-001	PLATE, MOUNTING	DRIVE MODULE	
1	1	1	1	1	1	1	1	1	1	1	1	13	032975-001	PCBA ASSEMBLY, DRIVE		
-	-	-	-	1	-	1	-	-	-	-	-	12	032776-004	CONFIGURATION PLATE ASSY		
-	-	-	-	-	1	-	1	-	-	-	-	11	032776-003	CONFIGURATION PLATE ASSY		
-	-	-	-	-	-	-	-	1	-	1	-	10	032776-002	CONFIGURATION PLATE ASSY		
-	-	-	-	-	-	-	-	-	1	-	1	9	032776-001	CONFIGURATION PLATE ASSY		
1	1	1	1	1	1	1	1	1	1	1	1	8	032784-001	TENSIONER ASSY, ROTARY,	DRIVE BELT	
-	-	1	-	-	-	-	-	1	1	-	-	7	032446-003	FLYWHEEL ASSEMBLY	Ø1.505 PULLEY (1.595 P.D.)	
1	1	-	-	1	1	1	1	-	-	-	-	6	032446-002	FLYWHEEL ASSEMBLY	Ø1.656 PULLEY (1.746 P.D.)	
-	-	-	1	-	-	-	-	-	-	1	1	5	032446-001	FLYWHEEL ASSEMBLY	Ø2.093 PULLEY (2.183 P.D.)	
4	4	4	4	4	4	4	4	4	4	4	4	4	019011-001	WASHER, FLAT, ISOLATION		
4	4	4	4	4	4	4	4	4	4	4	4	3	019012-002	WASHER, SHOULDER, ISOLATION		
1	1	1	1	1	1	1	1	1	1	1	1	2	032783-001	DRIVE MOTOR ASSEMBLY		
1	1	1	1	1	1	1	1	1	1	1	1	1	032777-001	MACHINING, HEADFRAME		
	-	-	-	-	-	-	-	-	-	-	-	-	-012	MEDTRACK ST65	DOMESTIC	230V
-		-	-	-	-	-	-	-	-	-	-	-	-011	MEDTRACK ST55	DOMESTIC	230V
-	-		-	-	-	-	-	-	-	-	-	-	-010	MEDTRACK CR60	DOMESTIC	230V
-	-	-		-	-	-	-	-	-	-	-	-	-009	CLUBTRACK, C/T +, M/T SR60	DOMESTIC	230V
-	-	-	-		-	-	-	-	-	-	-	-	-008	MEDTRACK ST65	INTERNATIONAL	230V
-	-	-	-	-		-	-	-	-	-	-	-	-007	MEDTRACK ST65	DOMESTIC	115V
-	-	-	-	-	-		-	-	-	-	-	-	-006	MEDTRACK ST55	INTERNATIONAL	230V
-	-	-	-	-	-	-		-	-	-	-	-	-005	MEDTRACK ST55	DOMESTIC	115V
-	-	-	-	-	-	-	-		-	-	-	-	-004	MEDTRACK CR60	INTERNATIONAL	230V
-	-	-	-	-	-	-	-	-		-	-	-	-003	MEDTRACK CR60	DOMESTIC	115V
-	-	-	-	-	-	-	-	-	-		-	-	-002	CLUBTRACK, C/T +, M/T SR60	INTERNATIONAL	230V
-	-	-	-	-	-	-	-	-	-	-		-	-001	CLUBTRACK, C/T +, M/T SR60	DOMESTIC	115V

PARTS LIST

PART NO.	NEXT ASSY NO.	END ITEM NO.
-012	032450	000383
-011	032451	000378
-010	032390	000380
-009	032995 032994 032358	000377 000380 000390
-008 -007	032450	000383
-006 -005	032451	000378
-004 -003	032390	000380
-002 -001	032995 032994 032358	000390 000382 000377

APPLICATION

PRODUCTION

DRAWING RELEASE STATUS

QTY PER ASSEMBLY | DO NOT SCALE DRAWING

TOL: .X ± --- ; .XX ± --- ; .XXX ± ---

ANGLE: BENT ± 2° ; MACHINED ± 0.5°

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES
DIMENSIONS AND TOLERANCES PER ANSI Y14.5-1982

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DRAWN:	DERNOVSEK	11/30/94
ENGR:	S. DECKERS	02/01/95
MFG:	B. TRATHEN	02/02/95
QUAL:	K. BAILEY	05/01/95
COMPL:	B. NAFEA	05/02/95
MKTG:	---	---
TECH SVCE:		

StairMaster® SPORTS/MEDICAL PRODUCTS, INC.

TITLE

HEADFRAME ASSY, T/M, VARIABLE AC

SIZE	MODEL	DWG NO.	REV
D	TREDML	032359	W
SCALE 1.000	SOURCE PRO	SHEET 1 OF 12	

DWG NO. 032359 SH 1 REV W

DFORMATS-A SHT1

PARTS LIST CONTINUED ON SHEET 3

-012	-011	-010	-009	-008	-007	-006	-005	-004	-003	-002	-001	ITEM NUMBER				
4	4	4	4	4	4	4	4	4	4	4	4	54	030578-005	NUT,KEP,HEX,CONICAL WASHER	.250-20UNC-2B	
4	4	4	4	4	4	4	4	4	4	4	4	53	030578-002	NUT,KEP,HEX,CONICAL WASHER	6-32UNC-2B	
4	4	-	-	4	4	4	4	-	-	-	-	52	030577-001	NUT, KEP, HEX, LOCK WASHER	4-40UNC-2B	
4	4	4	4	4	4	4	4	4	4	4	4	51	016839-002	NUT, HEX	.313-18UNC-2B	
2	2	-	-	2	2	2	2	-	-	-	-	50	033317-033	SCREW, CAP, SOCKET HD, NYLOK	.250-20UNC-2A X .50L	
4	4	4	4	4	4	4	4	4	4	4	4	49	010827-205	SCREW, MACH., PN HD, PH	.250-20UNC-2A X .50L	
4	4	4	4	4	4	4	4	4	4	4	4	48	030579-021	SCREW, MACH., SEMS, PH HD, PH	.250-20UNC-2A X .50L	
4	4	4	4	4	4	4	4	4	4	4	4	47	010833-145	SCREW, SET	.250-20UNC-2A X .25L	
1	1	1	1	1	1	1	1	1	1	1	1	46	010833-144	SCREW, SET	10-32UNF-2A X .25L	
4	4	4	4	4	4	4	4	4	4	4	4	45	010828-102	SCREW, MACH., PN HD, PH	6-32UNC-2A X 1.25L	
2	2	2	2	2	2	2	2	2	2	2	2	44	010827-292	SCREW, MACH., PN HD, PH	10-24UNC-2A X .875L	
4	4	-	-	4	4	4	4	-	-	-	-	43	010827-221	SCREW, MACH., PN HD, PH	4-40UNC-2A X .625L	
4	4	4	4	4	4	4	4	4	4	4	4	42	010827-212	SCREW, MACH., PN HD, PH	10-24UNC-2A X .50L	
4	4	4	4	4	4	4	4	4	4	4	4	41	010820-386	SCREW, CAP, HEX HEAD	.313-18UNC-2A X 3.00L	
3	3	3	3	3	3	3	3	3	3	3	3	40	010820-207	SCREW, CAP. HEX HEAD	.375-16UNC-2A X 2.50L	
												39	DELETED			
2	2	2	2	2	2	2	2	2	2	2	2	38	010820-105	SCREW, MACH., HEX HEAD	.250-20UNC-2A X 1.25L	
2	2	2	2	2	2	2	2	2	2	2	2	37	010819-325	SCREW, MACH., HEX HEAD	.250-20UNC-2A X 1.00L	
8	8	8	8	8	8	8	8	8	8	8	8	36	010819-245	SCREW, MACH., HEX HEAD	.250-20UNC-2A X .750L	
1	1	1	1	1	1	1	1	1	1	1	1	35	033170-001	HARNESS, LIMIT SWITCHES	UP & DOWN	
2	2	2	2	2	2	2	2	2	2	2	2	34	019082-001	SWITCH, LIMIT, SNAP ACTION		
1	1	1	1	1	1	1	1	1	1	1	1	33	030843-001	GEAR, SPUR	GRADE POT	
1	-	-	-	1	1	-	-	-	-	-	-	32	018324-003	WIRE SET, GRADE POT	ST65	
1	1	1	1	1	1	1	1	1	1	1	1	31	033171-001	GRADE POT ASSEMBLY		
1	1	-	-	1	1	1	1	-	-	-	-	30	032811-001	BRACKET, POTENTIOMETER		
2	2	-	-	2	2	2	2	-	-	-	-	29	032796-001	SUPPORT BRACKET	HAND RAIL	
-	-	1	1	-	-	-	-	1	1	1	1	28	033537-001	PLATE, RACK GEAR, LH		
-	-	1	1	-	-	-	-	1	1	1	1	27	033536-001	PLATE, RACK GEAR, RH		
-	-	2	2	-	-	-	-	2	2	2	2	26	002298-002	WHEEL, BALL OR ROLLER BRG	CUSHION TREAD	
2	2	-	-	2	2	2	2	-	-	-	-	25	002298-001	WHEEL, BALL OR ROLLER BRG	CUSHION TREAD	
2	2	-	-	2	2	2	2	-	-	-	-	24	032798-001	GEAR, RACK, MODIFIED	M/T ST55/65	
-	-	2	2	-	-	-	-	2	2	2	2	23	032524-002	GEAR, RACK, MODIFIED	C/T, C/T+, M/T CR/SR60	
2	2	2	2	2	2	2	2	2	2	2	2	22	012990-002	BEARING, BRONZE		
1	1	1	1	1	1	1	1	1	1	1	1	21	013044-001	SHAFT, PINION		
1	1	1	1	1	1	1	1	1	1	1	1	20	031869-001	SPROCKET, 40B24 X .75	PINION SHAFT	
1	1	1	1	1	1	1	1	1	1	1	1	19	030448-001	KIT, ROLLER CHAIN, #40		
1	1	1	1	1	1	1	1	1	1	1	1	18	019081-004	SPROCKET, CHAIN	GRADE MOTOR	
1	1	1	1	1	1	1	1	1	1	1	1	17	033316-001	MOTOR ASSEMBLY, GRADE		

PRODUCTION

DRAWING RELEASE STATUS

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SIZE	MODEL	DWG NO.	REV
D	TREDML	032359	W
SCALE 1.000	SOURCE PRO	SHEET 2 OF 12	

DWG NO. 032359 SH 2 REV W

DFORMATS-A SHT2

-012	-011	-010	-009	-008	-007	-006	-005	-004	-003	-002	-001	ITEM NUMBER			
												85	DELETED		
4	4	4	4	4	4	4	4	4	4	4	4	84	017775-005	WASHER, LOCK, INT/EXT STAR	#10
AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	83	001739-004	ADHESIVE, SCREW LOCK	LOCTITE 290
1	1	-	-	-	-	-	-	-	-	-	-	82	032776-006	CONFIGURATION PLATE ASSY	
-	-	1	1	-	-	-	-	-	-	-	-	81	032776-005	CONFIGURATION PLATE ASSY	
4	4	-	-	4	4	4	4	-	-	-	-	80	017775-001	WASHER, LOCK, INT, EXT	.250
-	-	-	-	1	-	1	-	1	-	1	-	79	031610-003	SUPPRESSOR, FERRITE	
												78	DELETED		
4	4	4	4	4	4	4	4	4	4	4	4	77	001182-005	WASHER, EXT STAR	.250
1	1	1	1	1	1	1	1	1	1	1	1	76	010011-070	LABEL, ADH BACKED AL FOIL	GROUND SYMBOL
1	1	1	1	1	1	1	1	1	1	1	1	75	016222-003	LABEL, CAUTION	
AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	74	005002-001	GREASE	AEROSHELL #5
2	2	-	-	2	2	2	2	-	-	-	-	73	010827-202	SCREW, MACH, PN HD, PH	6-32 UNC-2A X .5 L
1	1	1	1	1	1	1	1	1	1	1	1	72	033174-004	PAD, SIL	
3	3	3	3	3	3	3	3	3	3	3	3	71	032352-005	PLUG, EXPANSION, CUP, STEEL	
21	21	21	21	21	21	21	21	21	21	21	21	70	034485-005	RIVET, BLIND	.125
21	21	21	21	21	21	21	21	21	21	21	21	69	011560-002	MOUNT, CABLE TIE	#6 HOLE
AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	68	001899-001	TIE, CABLE	
AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	67	001739-002	ADHESIVE, SCREW LOCK	LOCTITE 242
1	1	1	1	1	1	1	1	1	1	1	1	66	001100-004	KEY, SQUARE	.188 X .188 X 1.50
2	2	2	2	2	2	2	2	2	2	2	2	65	001100-002	KEY, SQUARE	.188 X .188 X 1.00
1	1	1	1	1	1	1	1	1	1	1	1	64	010511-011	WASHER, SPLIT-LOCK	.375
4	4	4	4	4	4	4	4	4	4	4	4	63	010511-010	WASHER, SPLIT-LOCK	.313
2	2	2	2	2	2	2	2	2	2	2	2	62	010511-007	WASHER, SPLIT-LOCK	#10
4	4	4	4	4	4	4	4	4	4	4	4	61	001164-021	WASHER, FLAT	.375 X .125 THK HARDENED
8	8	8	8	8	8	8	8	8	8	8	8	60	033318-001	WASHER, NEOPRENE	
1	1	1	1	1	1	1	1	1	1	1	1	59	001164-006	WASHER, FLAT	.375
4	4	4	4	4	4	4	4	4	4	4	4	58	001164-005	WASHER, FLAT	.313
4	4	12	12	4	4	4	4	12	12	12	12	57	001164-004	WASHER, FLAT	.250
2	2	2	2	2	2	2	2	2	2	2	2	56	001164-003	WASHER, FLAT	#10
6	6	4	4	6	6	6	6	4	4	4	4	55	001164-001	WASHER, FLAT	#6

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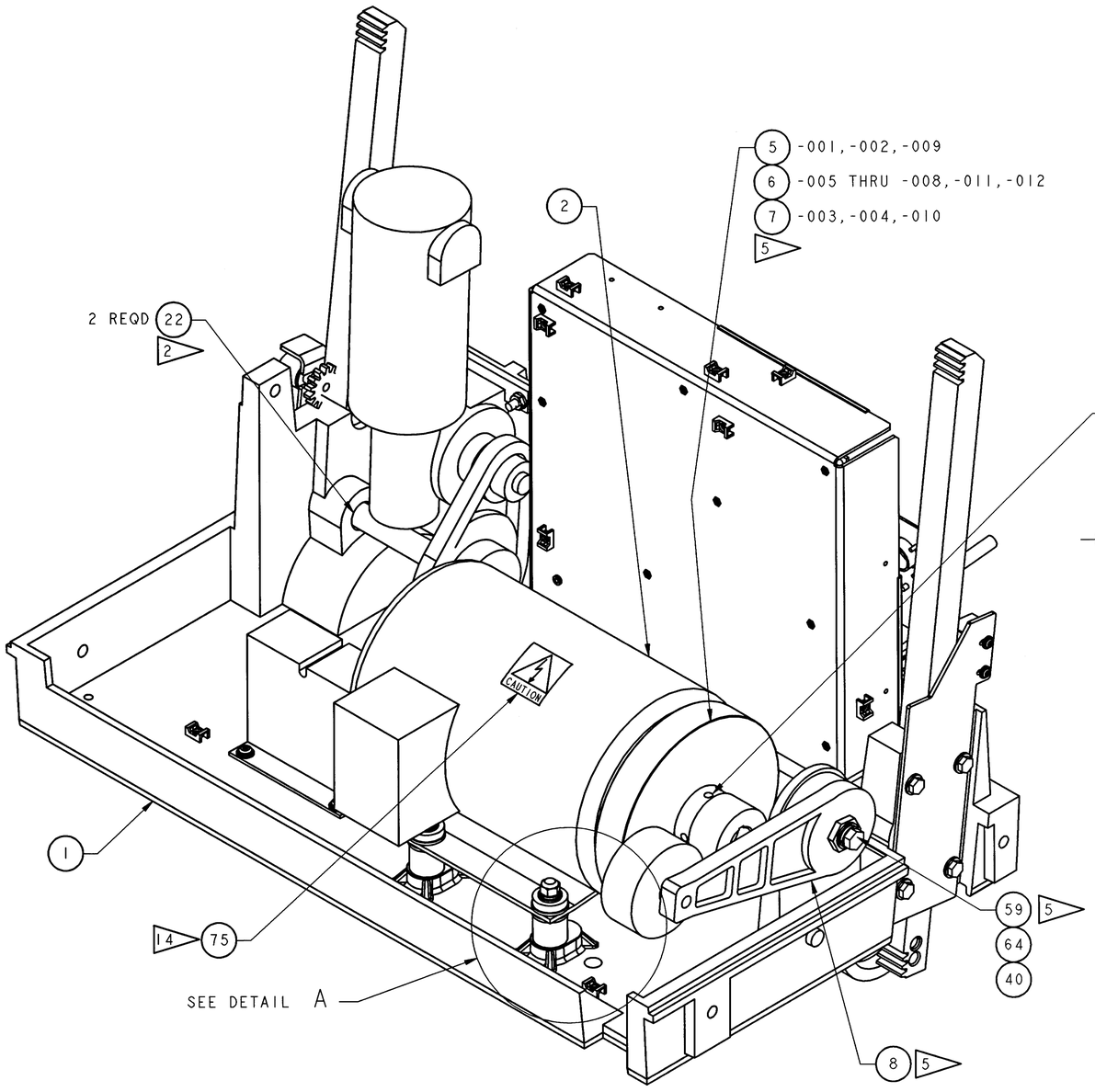
SIZE	MODEL	DWG NO.	REV
D	TREDML	032359	W
SCALE 1.000	SOURCE PRO	SHEET 3 OF 12	

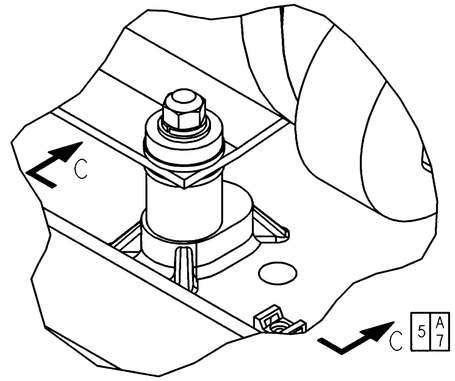
DWG NO. 032359 SH 3 REV W

DFORMATS-A SHT2



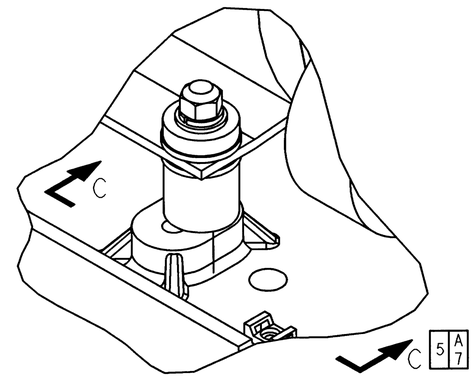
-001 SHOWN

-002 THRU -012 SIMILAR EXCEPT AS NOTED



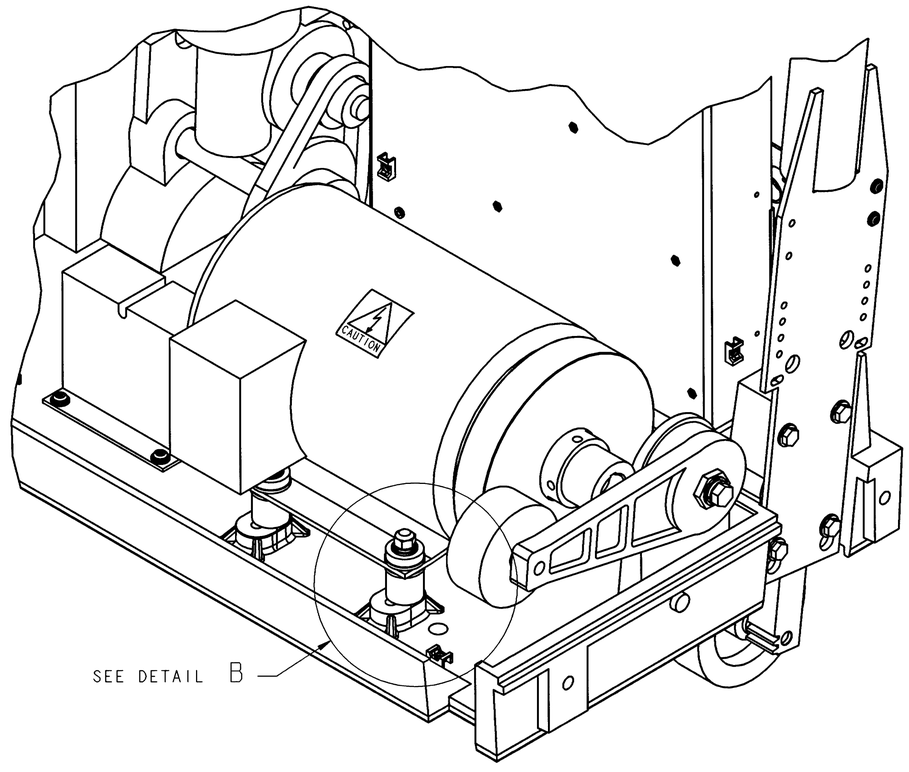
DETAIL A
SCALE 1/1

MOTOR POSITION -001,-002 & -009



DETAIL B
SCALE 1/1

MOTOR POSITION -003 THRU -008
-010,-011,-012



-005 SHOWN

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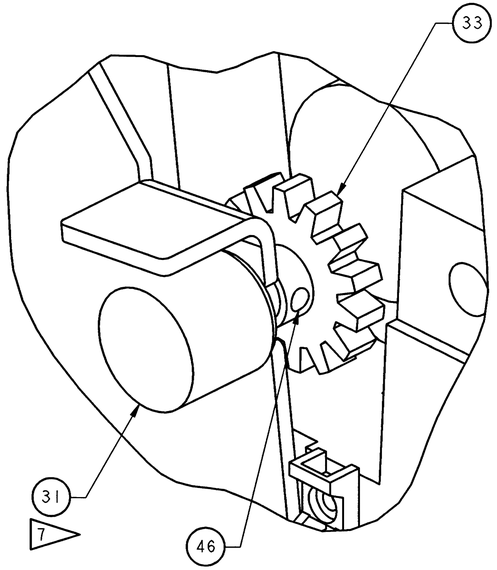
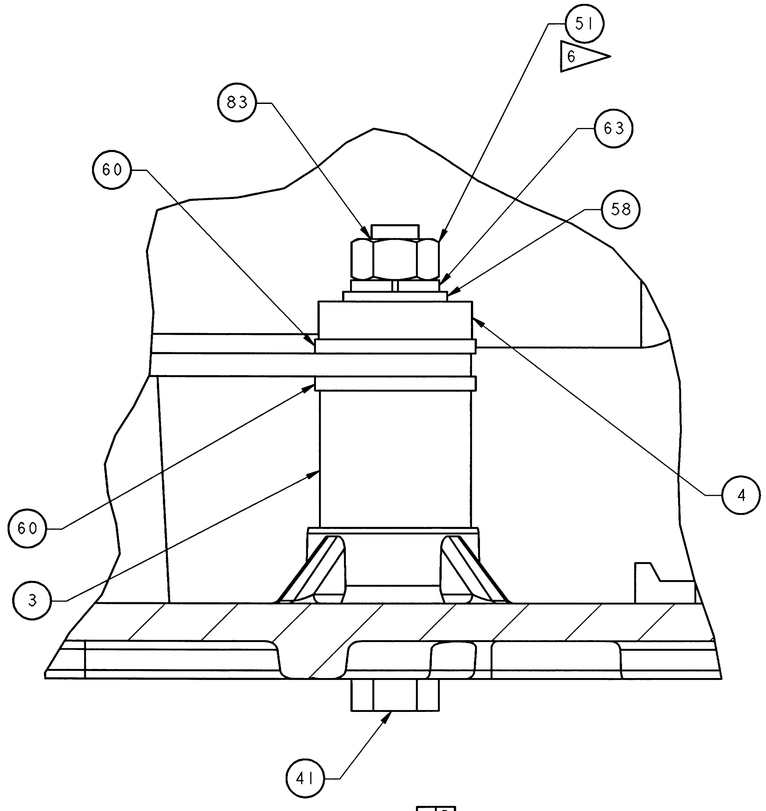
DRAWING RELEASE STATUS		SCALE 0.167	SOURCE PRO	SHEET 4 OF 12	

DFORMATS-A SHT2

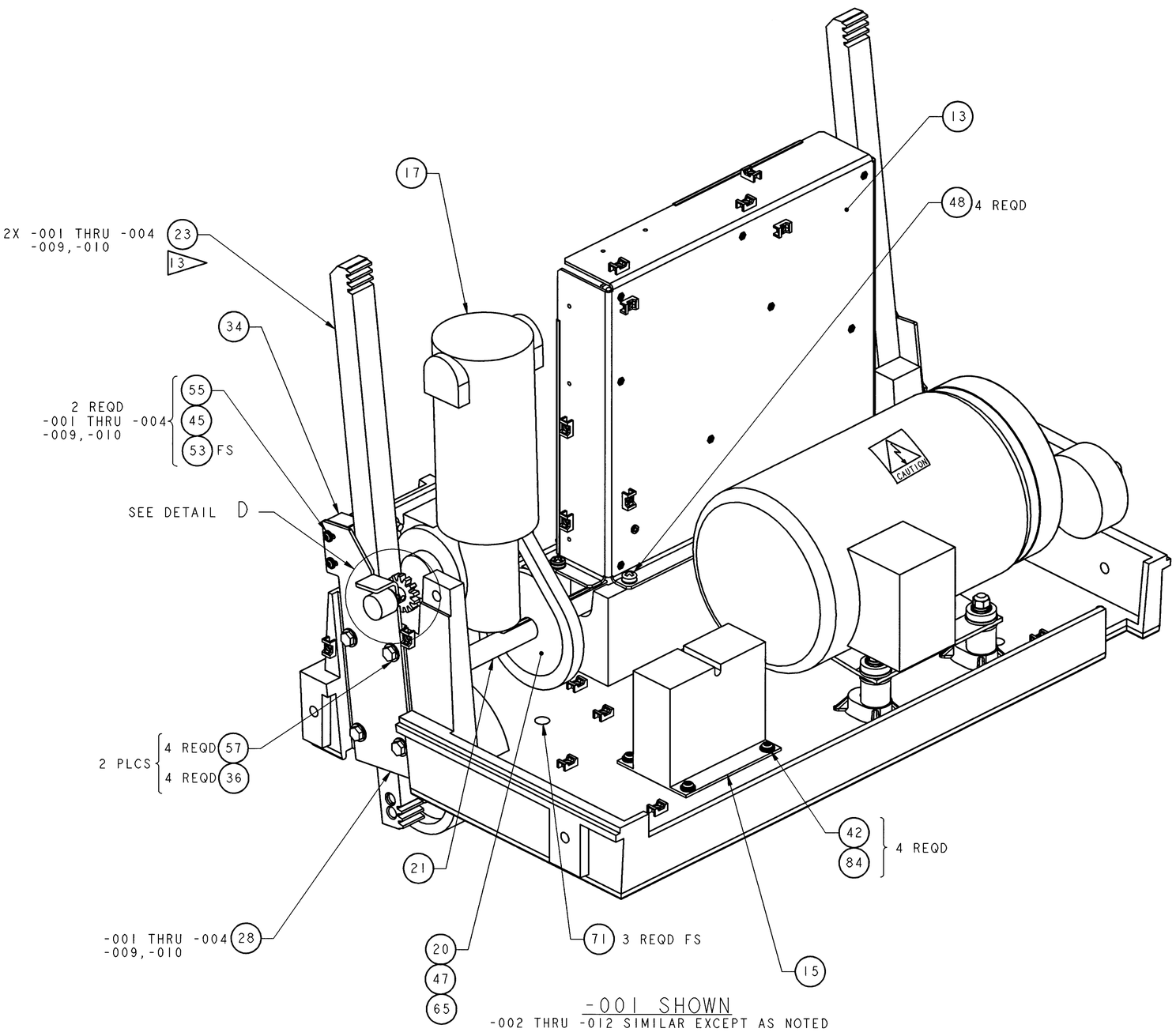
DWG NO. 032359 SH 4 REV W



DETAIL D
SCALE 2/1
-001 THRU -004,-009,-010



SECTION C-C (4 D 3)
SCALE 2/1
4 PLACES -001 THRU -012



-001 SHOWN
-002 THRU -012 SIMILAR EXCEPT AS NOTED

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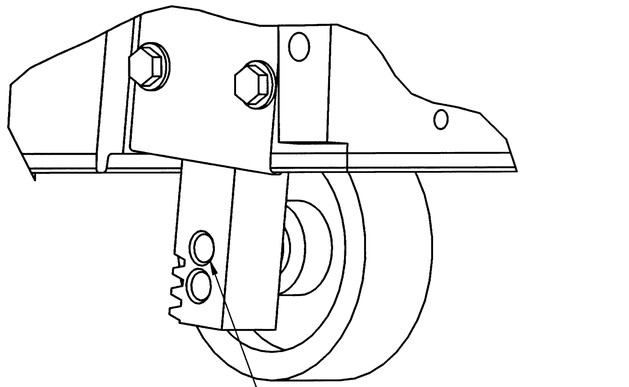
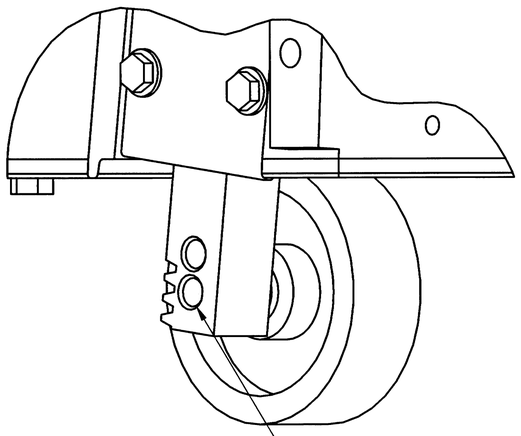
		SCALE 0.167	SOURCE PRO	SHEET 5 OF 12	

DFORMATS-A SHT2

DWG NO. 032359 SH 5 REV W

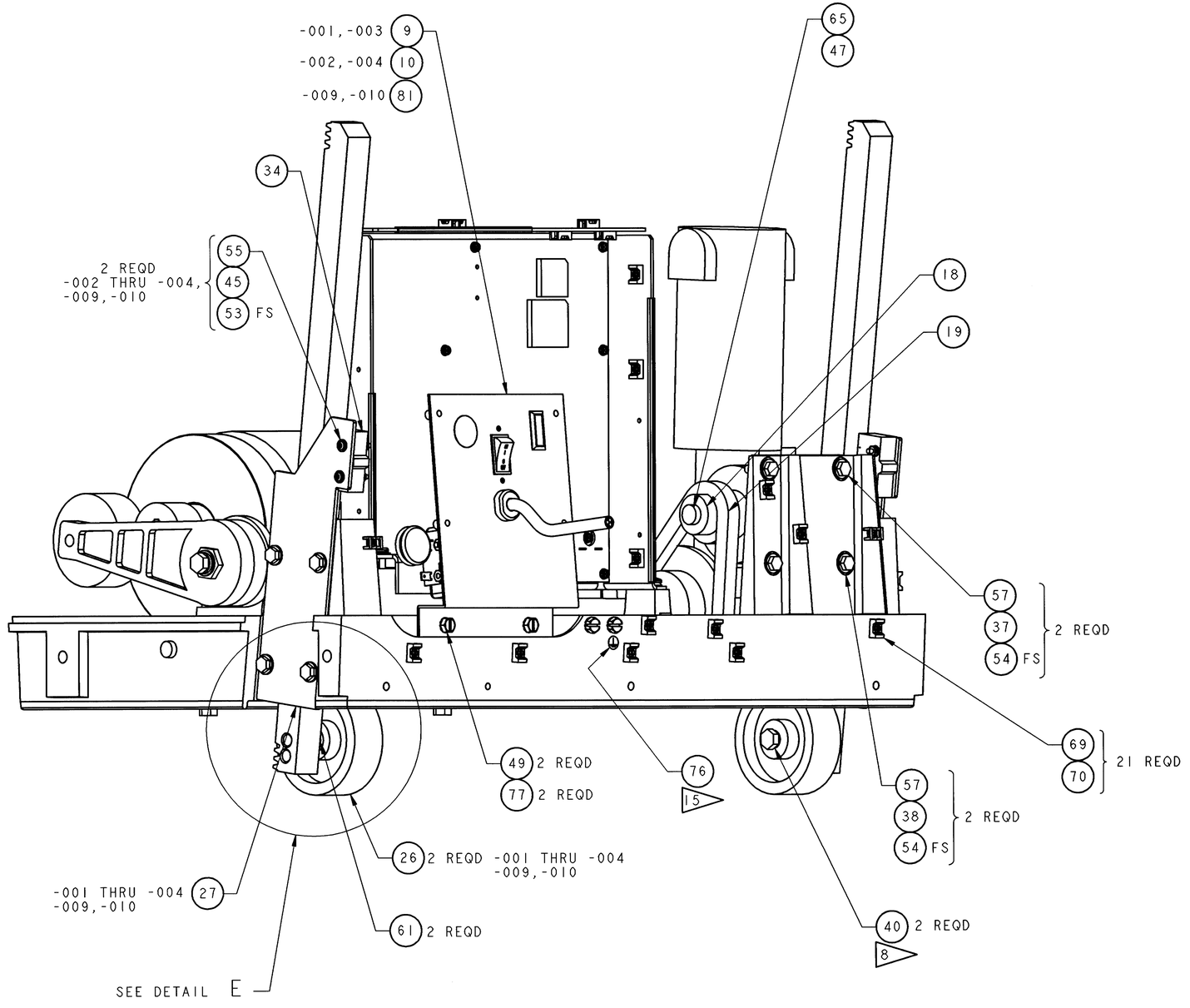


-001,-002,-009 USE UPPER HOLE



-003,-004,-010 USE LOWER HOLE

DETAIL E
SCALE 1/1

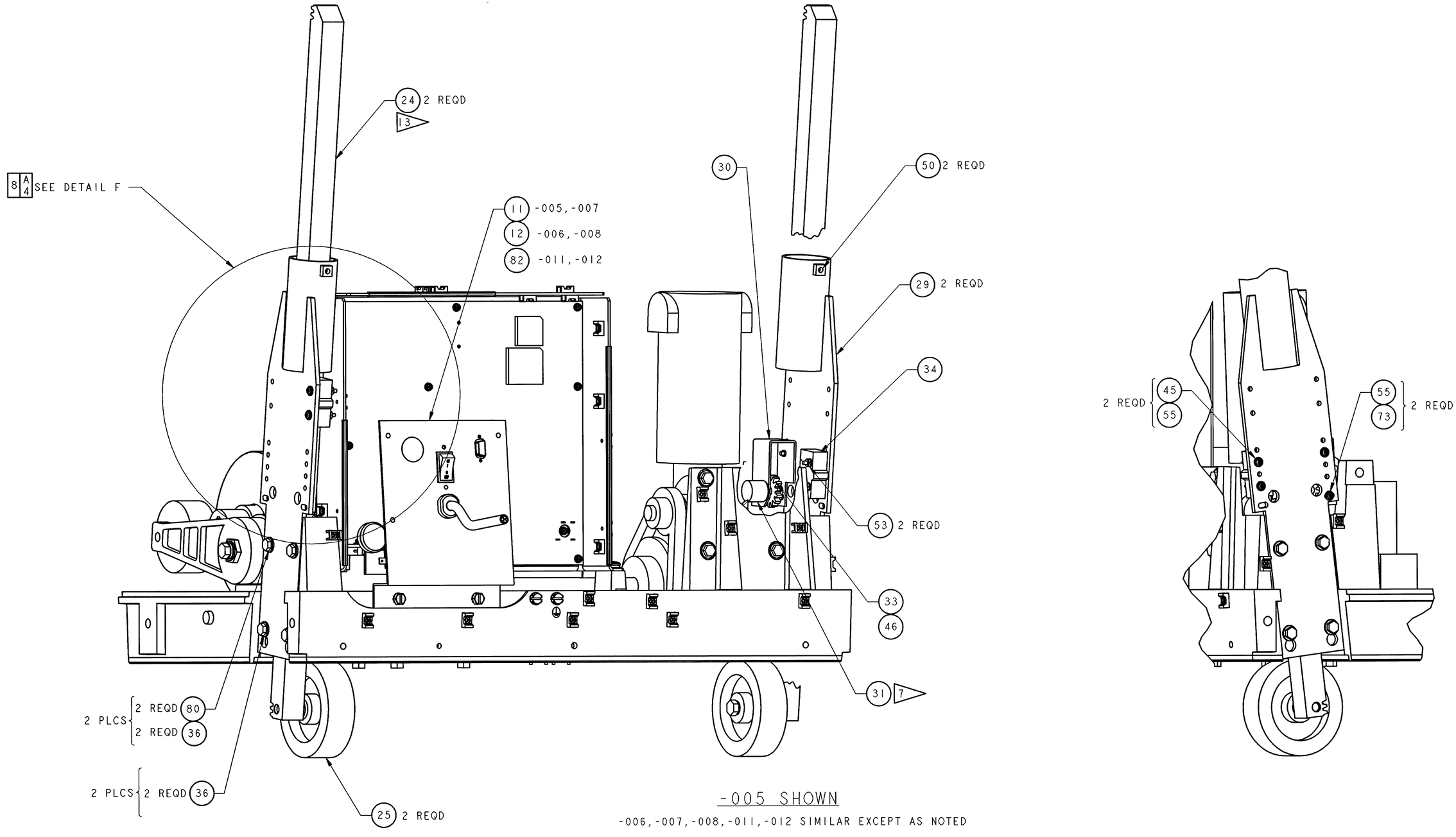


-001 SHOWN
-002 THRU -012 SIMILAR EXCEPT AS NOTED

PRODUCTION DRAWING RELEASE STATUS	CONFIDENTIAL & PROPRIETARY THIS DOCUMENT IS THE PROPERTY OF STAIRMASTER© SPORTS/MEDICAL PRODUCTS, INC. IT MAY NOT BE REPRODUCED IN WHOLE OR IN PART, PROVIDED TO THIRD PARTIES, OR USED FOR ANY PURPOSE OTHER THAN THE PERFORMANCE OF WORK FOR STAIRMASTER, WITHOUT WRITTEN AUTHORIZATION. ALL RIGHTS ARE RESERVED INCLUDING COPYRIGHTS.	SIZE D	MODEL TREDML	DWG NO. 032359	REV W
		SCALE 1.000		SOURCE PRO	SHEET 6 OF 12

DFORMATS-A SHT2

DWG NO. 032359 SH 6 REV W



-005 SHOWN

-006,-007,-008,-011,-012 SIMILAR EXCEPT AS NOTED

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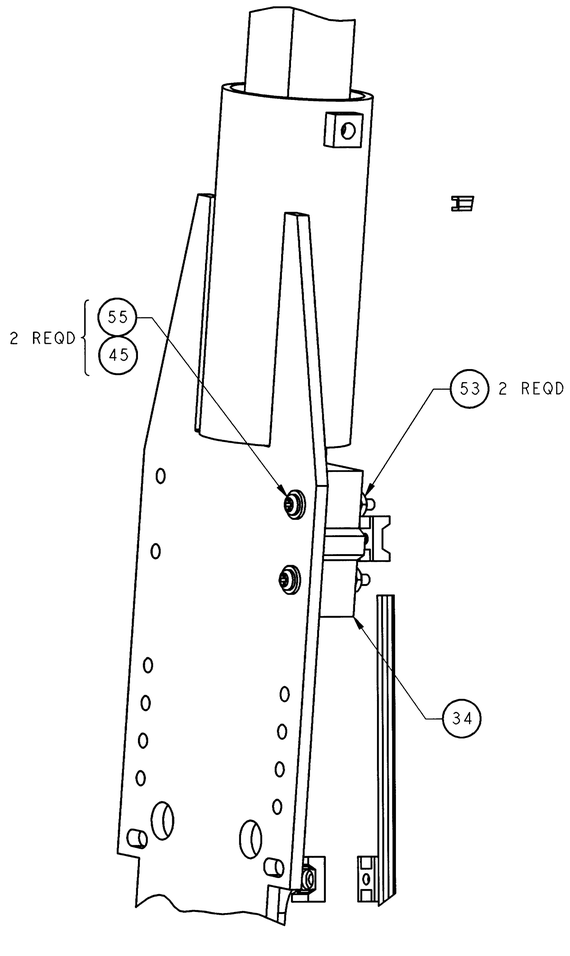
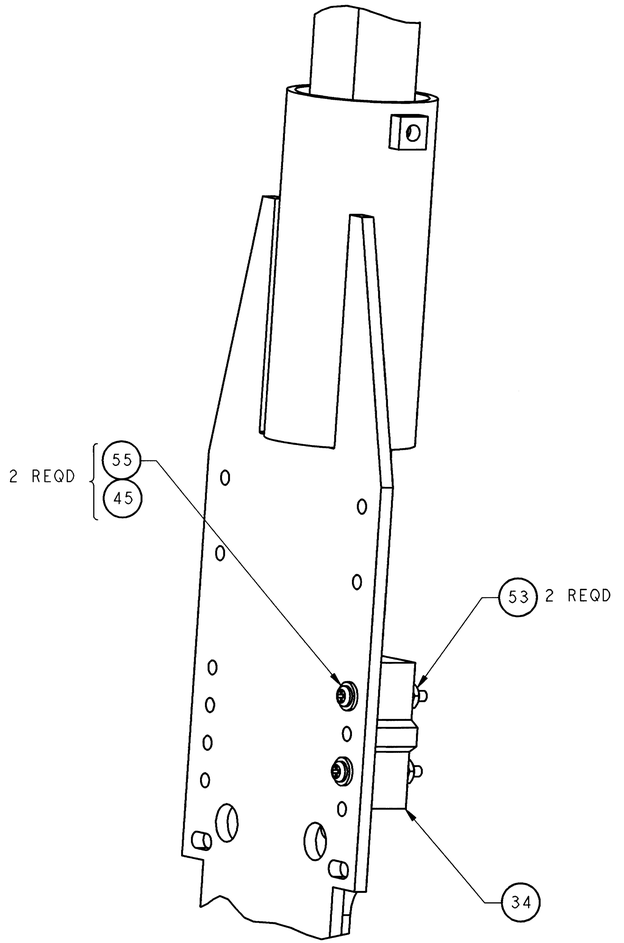
SIZE	MODEL	DWG NO.	REV
D	TREDML	032359	W
SCALE 1.000	SOURCE PRO	SHEET 7 OF 12	

DFORMATS-A SHT2



-005,-006 AND -011 POSITION



-007,-008 AND -012 POSITION

DETAIL F [7|C|8]

RIGHT SIDE LIMIT SWITCH LOCATION

PRODUCTION	CONFIDENTIAL & PROPRIETARY	SIZE D	MODEL TREDML	DWG NO. 032359	REV W
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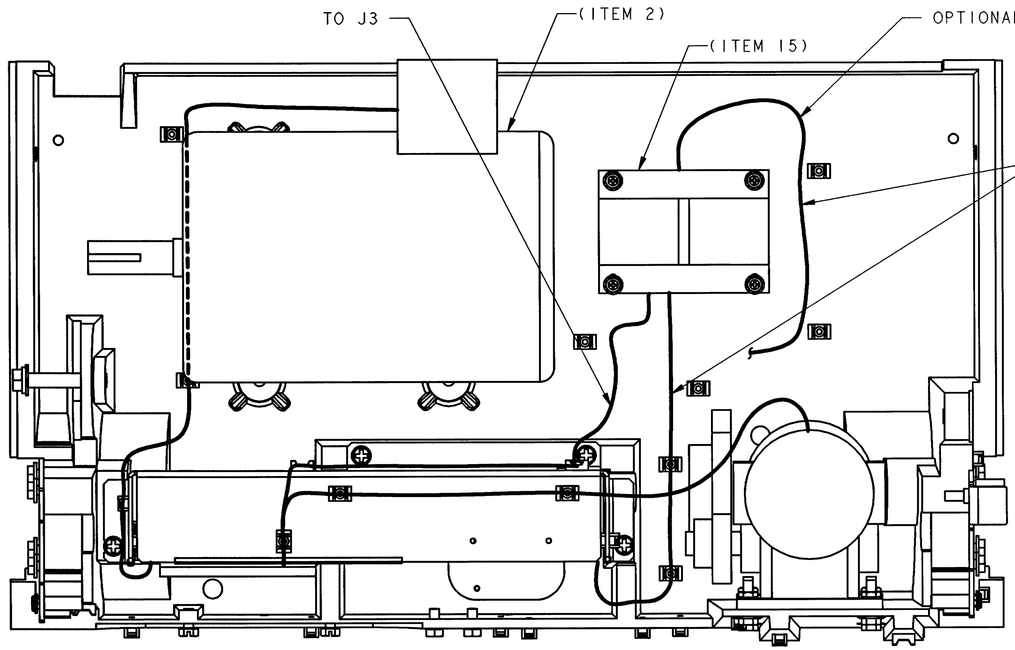
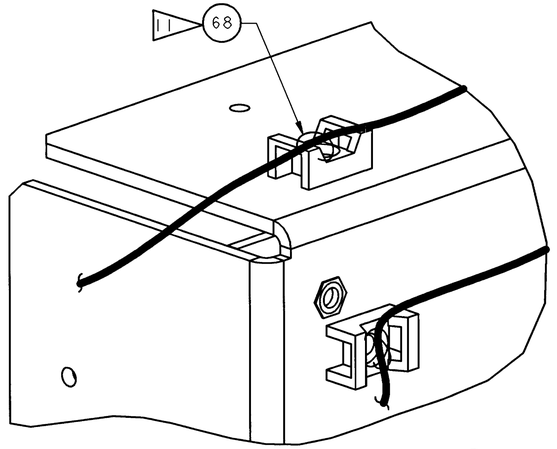
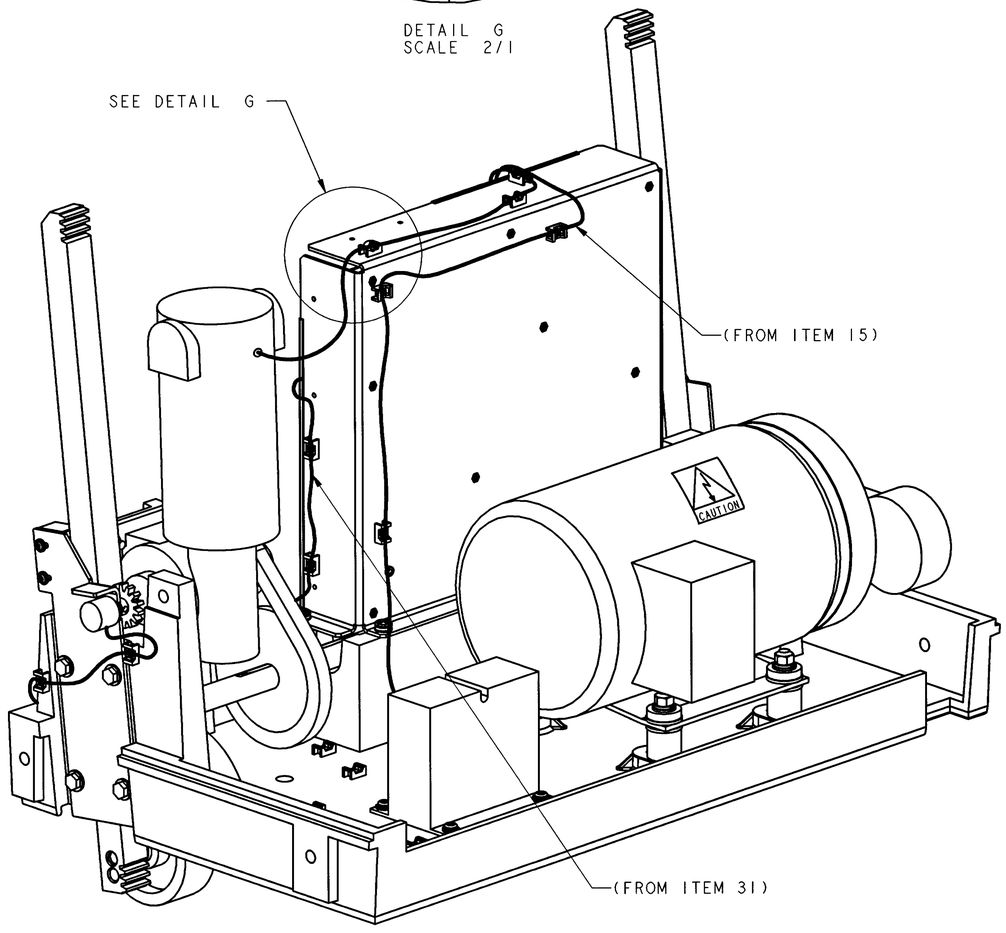
DFORMATS-A SHT2

DWG NO. 032359 SH 8 REV W

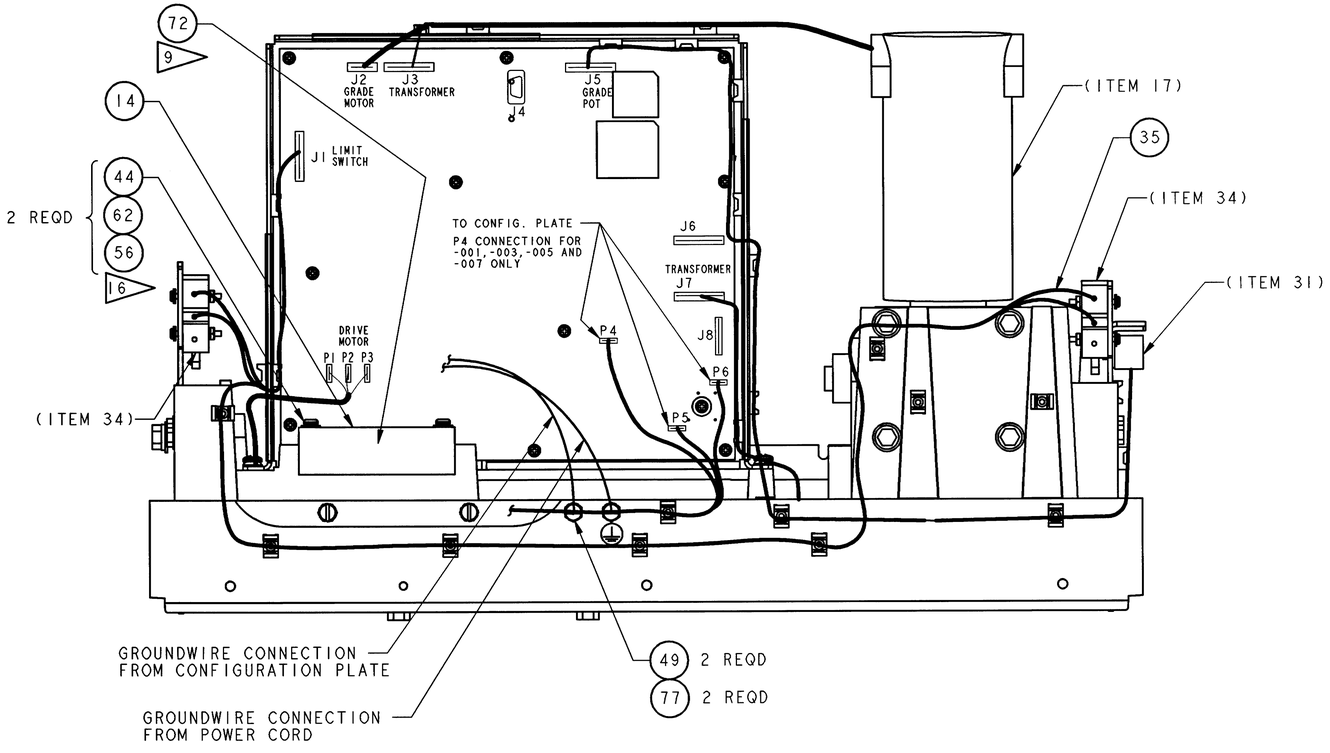




DETAIL G
SCALE 2/1



REAR ISO VIEW FOR REFERENCE ONLY
SCALE: NONE



-001 SHOWN

-002 THRU -004,-009,-010 SAME EXCEPT AS NOTED
SOME ASSEMBLY COMPONENTS OMITTED FOR CLARITY.

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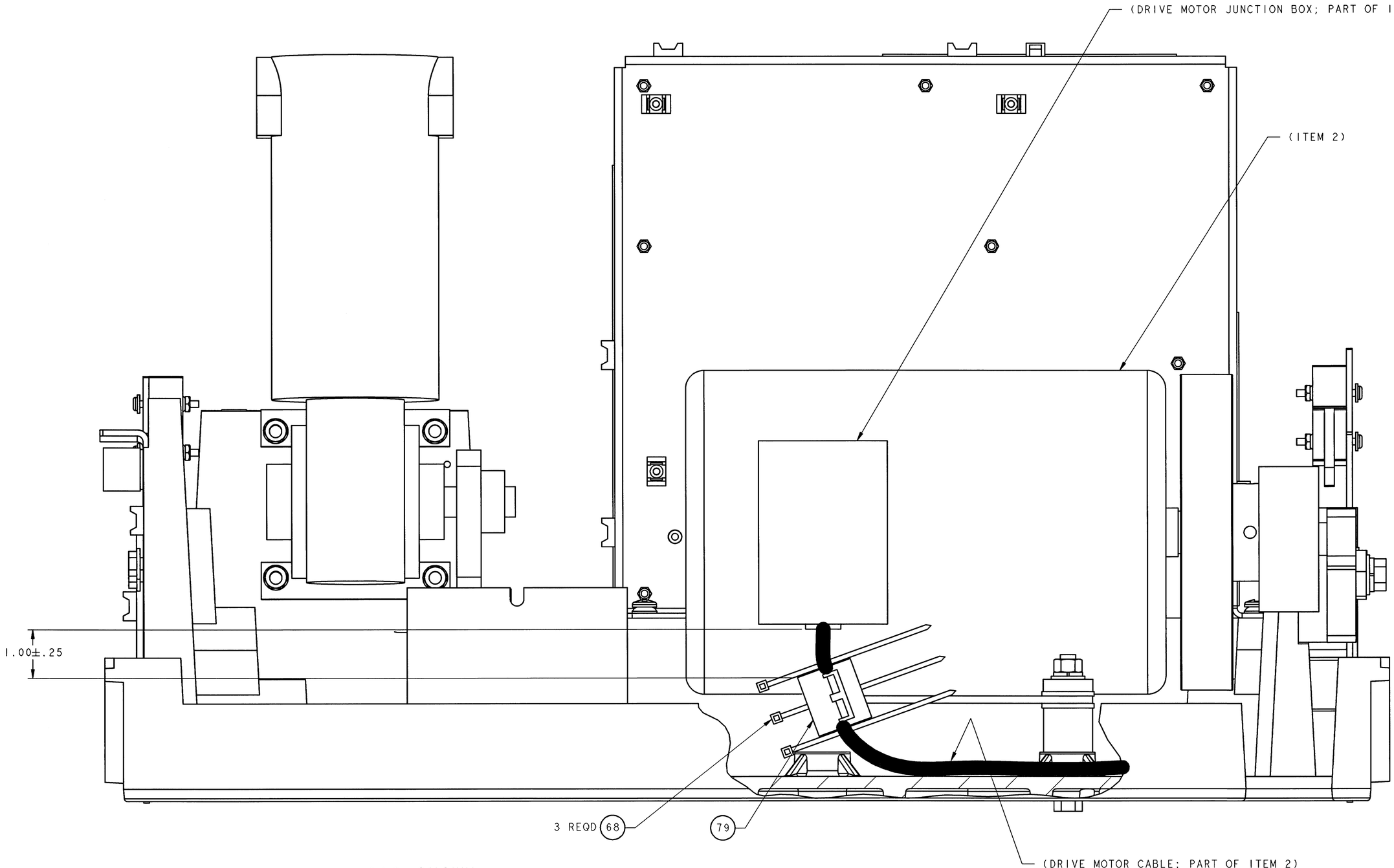
SIZE	MODEL	DWG NO.	REV
D	TREDML	032359	W
SCALE 1.000		SOURCE PRO	SHEET 9 OF 12

DFORMATS-A SHT2



-002 SHOWN
SCALE: 1/1

DRIVE MOTOR CABLE CONFIGURATION
-002, -004, -006, AND -008 ONLY
(SOME ASSEMBLY COMPONENTS OMITTED FOR CLARITY)

PRODUCTION	CONFIDENTIAL & PROPRIETARY	SIZE D	MODEL TREDML	DWG NO. 032359	REV W
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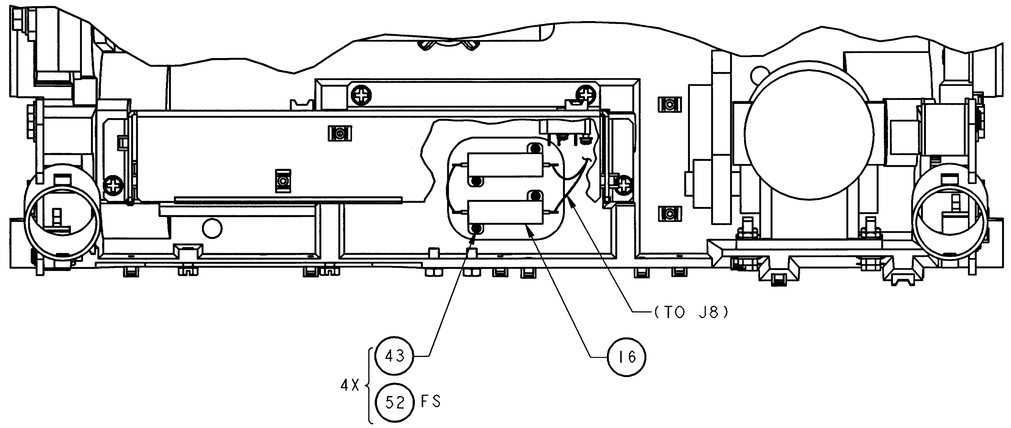
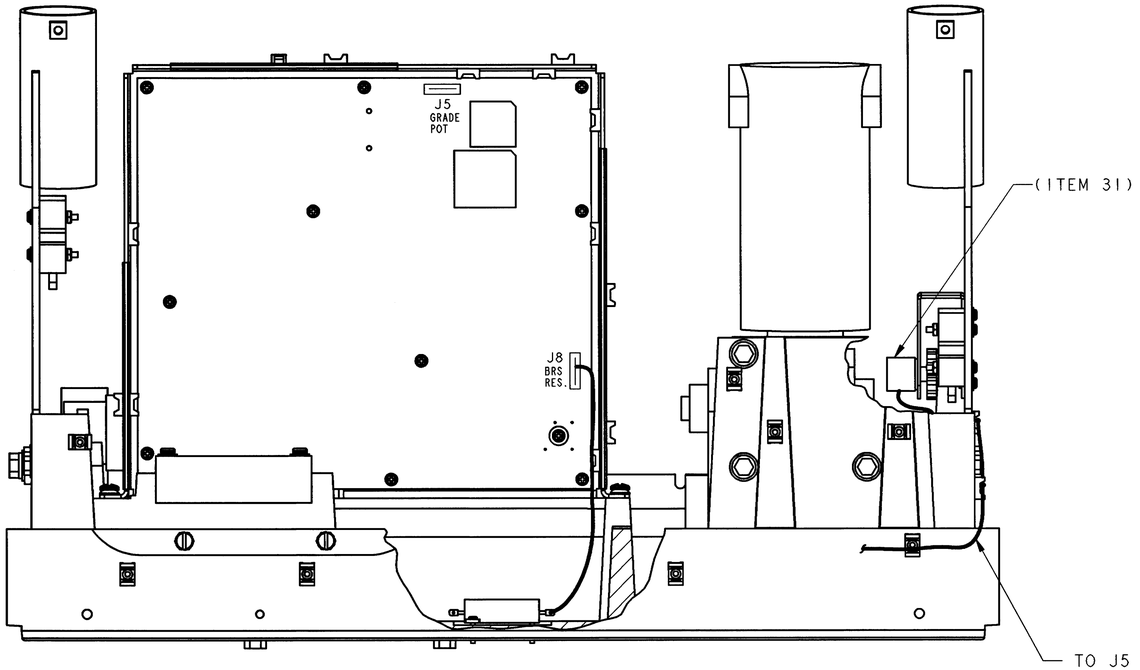
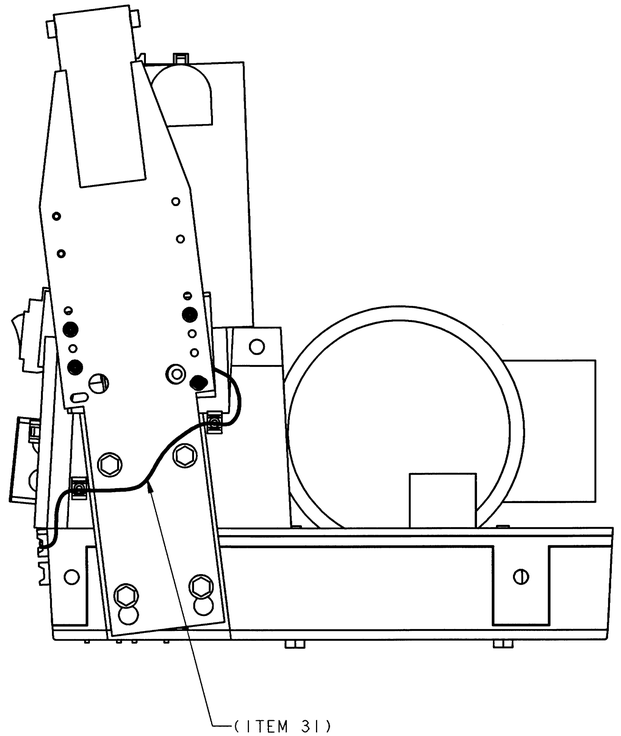
DFORMATS-A SHT2

DWG NO. 032359 SH 10 REV W







-005 SHOWN

(SOME ASSEMBLY COMPONENTS OMITTED FOR CLARITY)

-005 THRU -008,-011,-012 SAME AS -001 EXCEPT AS NOTED

SEE SHEET 9 FOR COMMON WIRING

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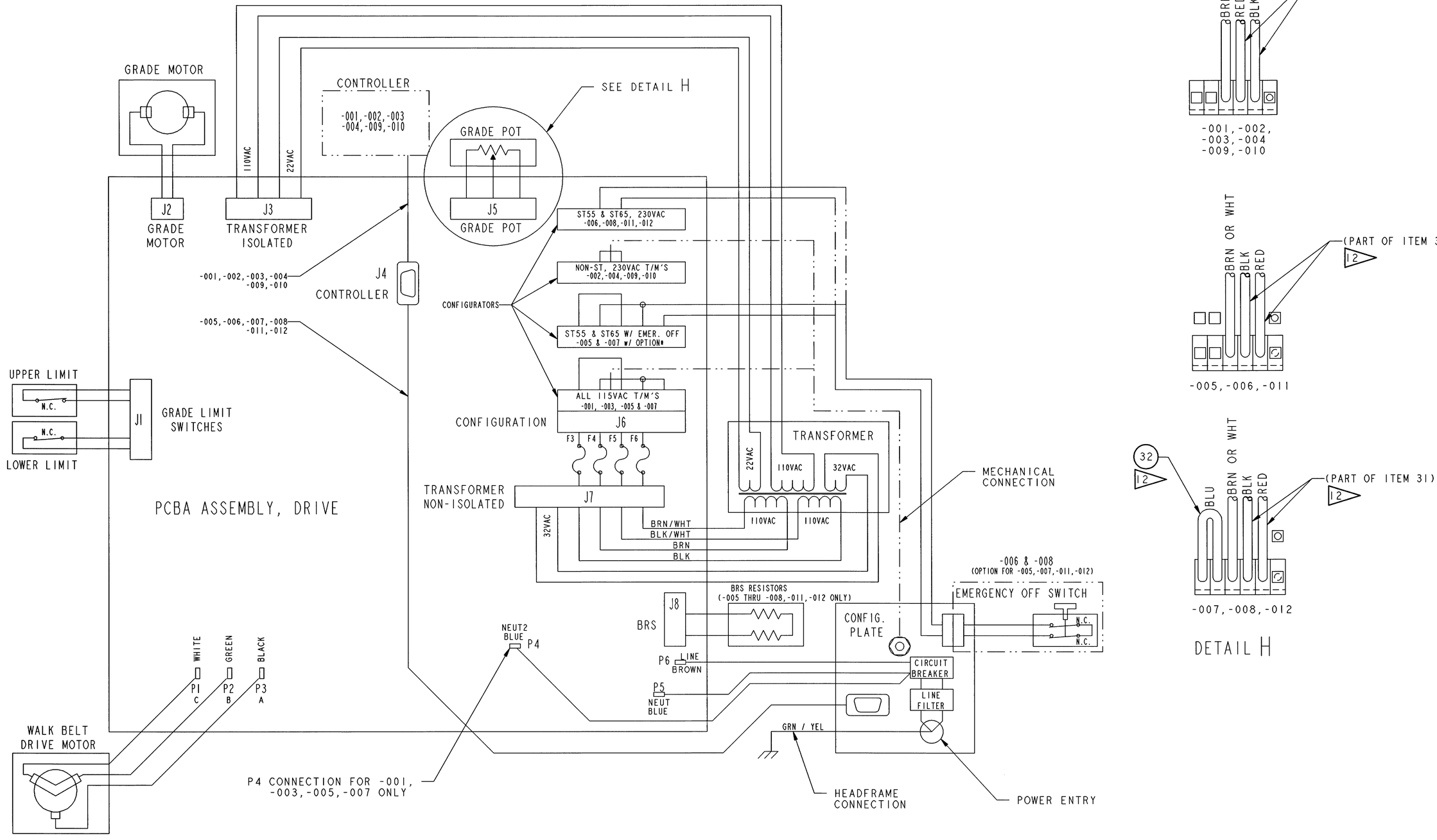
SIZE	MODEL	DWG NO.	REV
D	TREDML	032359	W
SCALE 1.000	SOURCE PRO	SHEET 11 OF 12	

DWG NO. 032359 SH 11 REV W

DFORMATS-A SHT2



SYSTEM WIRING DIAGRAM

-001 THRU -012 IDENTICAL
EXCEPT AS NOTED

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SIZE	MODEL	DWG NO.	REV
D	TREDML	032359	W
SCALE 1.000		SOURCE PRO	SHEET 12 OF 12

DFORMATS-A SHT2

NOTES: UNLESS OTHERWISE SPECIFIED

1. ASSEMBLE PER QUINTON WORKMANSHIP STANDARDS MANUAL, P/N 018124.

2 TIN AND FORM X-END OF WIRES (ITEM 13), PRIOR TO SOLDERING TO POTENTIOMETER (ITEM 1) AS SHOWN IN DETAIL A.

3 DELETED

4 DELETED

5. MARK ASSEMBLY WITH PART NUMBER AND REV LETTER TO WHICH MANUFACTURED.

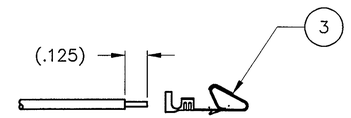
6 INSTALL W4 (ITEM 8) IN P5 (ITEM 2) AS REQUIRED AT NEXT ASSEMBLY LEVEL.

7 PART NUMBER 011582-101 IS AN ACCEPTABLE ALTERNATE.

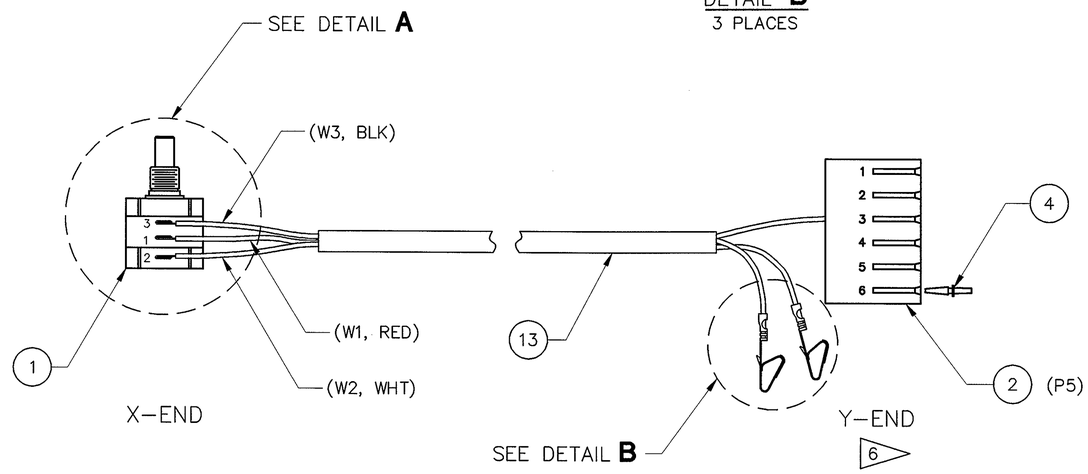
8 TESTING REQUIRED FOR THE -002 ASSY. SEE DRAWING 033171-801.

9. -002 ONLY, INDIVIDUALLY PACKAGE EACH ASSEMBLY INCLUDING W4 AND INSTRUCTIONS, (ITEMS 8 AND 11).

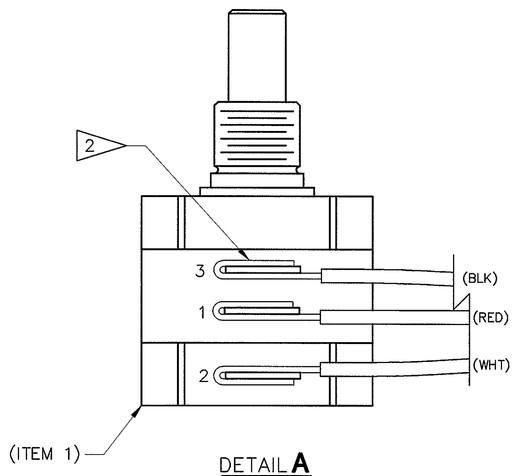
REVISIONS				
LTR	ZONE	DESCRIPTION	APPROVED	DATE
K		DCN: 48503 CPN: 48502 DELETED ITEMS 1,2,3,4,13 FROM -002 CONFIGURATION ADDED -001 CONFIGURATION TO -002. ACTION CODE: F1 MOD: DOR	D.Kindle J.W.Myatt Georgia Tran D.VanPelt	5/11/99 5/12/99 5/12/99 5/12/99



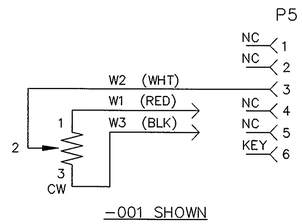
DETAIL **B**
3 PLACES



-001 SHOWN
-002 AS NOTED



DETAIL **A**



-001 SHOWN

SCHEMATIC DIAGRAM

WIRE TABLE					X-END			Y-END		
ITEM	WIRE	GAUGE	LENGTH	COLOR	JACKET STRIP	WIRE STRIP	ITEM	JACKET STRIP	WIRE STRIP	ITEM
13	W1	20	38.0±.5	RED	1.00 ±.25	.375 +.040 −.000	1	1.00 ±.25	.125 +.040 −.000	3
	W2			WHT						
	W3			BLK						

-002	SPARES	000402 000390 000383 000382 000380 000378 000377
-001	032359	
PART NO.	NEXT ASSY NO.	END ITEM NO.
APPLICATION		

PRODUCTION

-002	-001	ITEM NUMBER	PART NUMBER	DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION
	AR	13	002162-001	CABLE, GENERAL	20 AWG, 3 CONDUCTOR 300V	W1,W2,W3
		12	DELETED			
	1	11	033171-352	INSTR, GRADE POT INST & CAL		
		10	DELETED			
		9	DELETED			
	1	8	018324-003	WIRE SET, GRADE POT	ST65	W4
		7	DELETED			
		6	DELETED			
		5	DELETED			
	1	4	007929-002	KEY, POLARIZING		
	3	3	011582-111	CONNECTOR, CRIMP TERMINAL	CONTACT	
	1	2	011582-006	CONNECTOR, CRIMP TERMINAL	HOUSING	P5
	1	1	016212-002	POTENTIOMETER	10 TURN, 5K OHMS	
	—	—	-002	ASSEMBLY, GRADE POT	SPARES	
	1	—	-001	ASSEMBLY, GRADE POT		

PARTS LIST

QTY PER ASSY	DO NOT SCALE DRAWING	DRAWN: R.P-CANNON	12/22/94
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES DIMENSIONS AND TOLERANCES PER ANSI Y14.5M-1982	TOL .XX ± --, .XXX ± ---, ANGLE ± --	ENGR: V.PIPINICH	1/31/94
		MFG ENGR: S.CURRAN	1/31/94
		QUAL ENGR: K.BAILEY	4/4/95
		COMPL ENGR: B.NAFEA	4/31/95
		REG AFFAIRS:	

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QUINTON your heart company
3303 MONTE VILLA PARKWAY
BOTHELL, WASHINGTON 98021-8906
425/402-2000

TITLE
ASSEMBLY, GRADE POT

SIZE	MODEL	DWG NO.	REV
D	MODEL	033171	K
SCALE 1/1		SOURCE AUTOCAD	SHEET 1 OF 1

DWG NO. 033171 SH 1 REV K

DI-F

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